Animals, Identity and Cosmology: Mortuary Practice in Early Medieval Eastern England

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Abstract

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The inclusion of animal remains in funerary contexts was a routine feature of Anglo-Saxon cremation ritual, and less frequently of inhumations, until the introduction of Christianity during the 7th century. Most interpretation has focused either on the animal as symbolic of identity or as an indication of pagan belief, with little consideration given to the interaction between these two aspects. Animals were a fundamental and ubiquitous part of early medieval society, and their contribution to mortuary practices is considered to be multifaceted, reflecting their multiple roles in everyday life.

This project considers the roles of animals in mortuary practice between the 5th-7th centuries across five counties in eastern England – Norfolk, Suffolk, Lincolnshire, Cambridgeshire and Essex – in both cremation and inhumation rites. Animal remains have been recognised in 5th to 7th century burials in eastern England from an early date, and the quality of the existing archives (both material and written) is investigated and discussed as an integral part of designing a methodology to effectively summarise data across a wide area. From the eastern England dataset, four aspects of identity in mortuary practice are considered in terms of their influence on the role of animals: choice of rite (cremation/inhumation); human biological identity (age & gender); regionality; and changing expressions of belief and status in the 7th century. The funerary role of animals is argued to be based around broadly consistent cosmologies which are locally contingent in their expression and practice.

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"You must depend upon affection, reading, knowledge, skill – more of each than you have…"

Wendell Berry (2013: 354)

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470AD

No horse for you, my bonnie lad,
No sword dies to your name.
I stood beneath the stars all night
And watched the hungry flames.

You go to feed the ravens, love.
And we eat to you this hour,
But the meat to me is bitter,
And the mead we drink is sour.

Nine months I formed the clay of you,
Then nine years from your birth,
Today I shaped and fired the clay
To hold you in the earth.

Tomorrow they will pick your bones
Out from the pyre's wreck.
White bones are for forever, love,
And time is for the rest.

Then my bonnie lad, I'll carry you,
To the hills of the long-gone,
And lay you in the earth to rest,
And rise, and journey on.

By Clare Rainsford

1: Introduction

“Yet we cannot lightly dismiss these twisted bones as of no consequence when we recall how widely scattered is their occurrence in both time and space.” (Wells 1960: 30)

1.1 Introduction

In the early 1930s, F.R. Mann, the excavator of the Anglo-Saxon cemetery at Caistor-by-Norwich noted of an inhumation burial: “This grave… was merely a hole in the ground. The upper parts of the skeleton were under many bones of the ox and the pig…” (Myres & Green 1973: 230). Despite being the “only objects associated with the burial”, these animal bones are simply described as “not kept” (Myres & Green 1973: 230).

While the excavation of Caistor-by-Norwich can be taken neither as typical for Anglo-Saxon cemeteries, nor even necessarily typical of excavations of its era, the treatment and curation of animal bone from the cemetery is instead emblematic of a broader pattern. The early Anglo-Saxon burial record is famously rich, but animal bone has been relatively disregarded compared to other grave goods. Artefacts, including cremation urns, which can be used to give a typological classification and therefore a date, were traditionally considered the most important part of burials. Theoretical and methodological developments have meant that environmental evidence is now regularly retained and reported, but the many years backlog of sites from which this was not the case still acts as a stumbling block. The work of Julie Bond in the 1990s on Spong Hill and Sancton (Bond 1993, 1994, 1996) highlighted the importance of animal bone in Anglo-Saxon cremations, and has prompted a number of further studies (e.g. McCullough-French 2017, Richards et al. 2004, Worley 2010). Animal bone in inhumation burials, with the exception of the large and obvious horse burials, is reported in cemetery reports, but otherwise largely ignored. The opening quote from Calvin Wells – one of the pioneers of cremated bone analysis – is taken from his seminal 1960 article on the analysis of cremated human bone (Wells 1960). While the “twisted bones” to which he refers are cremations, the quote also summarises some of the key difficulties with animal bone from Anglo-Saxon burials: it is not visually impressive; it requires specialist knowledge in analysis; and its role in burial is far from self-evident. In terms of the disciplinary structure of archaeology, these datasets have tended to fall between disciplines – neither in the remit of osteoarchaeologists employed to analyse the human remains, nor artefacts to be reported by the finds specialists studying the remainder of the grave assemblage, but often too scant or problematic to be the subject of study by zooarchaeologists, for whom the vast majority of data comes from settlement sites, for which most of their analytical methods are developed. However, the inclusion of animal remains in human graves and cemeteries is a practice known from many periods and many areas of the world, from Mesolithic Siberia (Losey et al 2011) to Ancient Egypt (Ikram 2005). In England, the inclusion of animal bone in 5th-7th century burials can be seen as part of a tradition widespread across the Continent and in Scandinavia (Fern 2010), and simultaneously the final phase of a practice which dates back to the Neolithic. While the pace of work in this area has increased appreciably in the past twenty years, both in terms of site analyses (e.g. Bond 2005, Bond & Mustchin 2015, Mays 2009, Serjeantson 1994) and theoretical underpinnings (Fern 2010, Pluskowski 2010, Williams 2001), this still remains a dataset which has been relatively neglected, and which has rarely been exploited to its full potential.

The modern perspective on animals is broadly anthropocentric, working from an assumption that humans and non-human animals are two fundamentally different categories of beings (O'Connor 2013). This is reflected in the traditionally "functional" interpretations of animals in graves – as food offerings for the afterlife (Lethbridge 1938, Vierck 1980), as a steed for a warrior (Piggott 1992), as some form of superstitious protection (Meaney 1981, Wilson 1992). However, the modern anthropocentric view may bear little relevance to the pagan 5th and 6th centuries, where the boundary between humans and animals may have been perceived as far more mutable and animals played a critical role in belief (Bond & Worley 2006, Pluskowski 2010). The Anglo-Saxon burial record may therefore be an important resource into understanding the role of animals in past cosmologies, at a time when the animal and human worlds were deeply intertwined. Unlike other artefacts within the burial, animal offerings also indicate some of the dramatic process of the funeral, as they imply sacrifice in their inclusion, and therefore some of the rituals and beliefs which may have surrounded the death of a member of the community. Animal bone – while visually unprepossessing - nevertheless has a vast potential to inform us about the experience of the burial, and how social identities and cosmologies were constructed, negotiated and materialised at the graveside.

1.1.1 Research Aims & Direction

The central aim of this research is to investigate the nature of mortuary practices involving animals in eastern England in the 5th-7th centuries AD, how these are used to reflect or materialise the identity of the deceased, and the cosmological beliefs which influence these practices. What is currently known about the inclusion of animals in burials in this area is based on a handful of well-researched sites, predominantly cremation – particularly Spong Hill (Bond 1994), Sutton Hoo (Bond 2005), and Sancton (Bond 1993), which latter falls just outside the northern borders of this study area. These case studies have been effective in describing the general situation and the taxa that can typically be expected to be included, but as case studies, they describe a static point. Anglo-Saxon burial practice is notably variable in the 5th-7th centuries, including cremation and inhumation rites, changes in practice from the beginning to the end of the period, as well as variation between and within cemeteries and across different regions (Dickinson 2011, Fisher 2004, Williams 2011). The inclusion of animal remains, therefore, has the potential to be as variable in practice as other aspects of Anglo-Saxon burial, and as yet, only a minor part of that variability has been defined. The use of Eastern England as a case study region enables exploration of the use of animal inclusions at a wide variety of sites from across the 5th to 7th centuries, and including both cremation and inhumation rites. The south-eastern seaboard was one of the earliest areas of England to be affected by

Anglo-Saxon migration, and one of the areas in which cultural change from the preceding Romano-British period is most marked (Higham & Ryan 2013). In addition, this core area offered one of the largest numbers of burials to study due to the high number of cemeteries excavated in this region, and also included some of the key cemetery sites which have been used to inform research agendas in Anglo-Saxon England (e.g. Spong Hill (Bond 1994)).

Animals fulfilled a multiplicity of roles in the Anglo-Saxon period – as sources of food, raw materials, transport, traction, protection, etc. The typical zooarchaeological data-set from a settlement or urban area is a palimpsest of all these activities – often disturbed, reworked, truncated, and degraded (see O'Connor 2003). Anglo-Saxon cemeteries present a very different dataset. Instead of a palimpsest from a variety of sources, we are presented with a series of individual deposits, each representing the outcome of a set of specific decisions. It is commonly accepted that the decision to include animals in graves is rooted in pagan belief (e.g. Wilson 1992), and that the specific nature of these beliefs may vary between communities (e.g. Carver 2010). However, the contents of graves are not a direct reflection of belief (Parker-Pearson 1999). The social identity of the deceased – their place within the community and the circumstances their death leaves behind them, as well as their personal beliefs and those of their close family – mediate and influence how particular aspects of belief are expressed (Carr 1995). How animals are used at the intersection of belief and identity is the subject this research intends to explore.

1.1.2 Objectives

In order to address the above research question, the following objectives are proposed:

1. To investigate taphonomic and other biasing factors in both cremation and inhumation burials, and to establish a methodology for data collection from across the Eastern England case study area to use the available data in the most effective manner.

2. To investigate the role of each taxon or group of taxa within burial individually across the Eastern England case study dataset, in terms of their frequency in burials, the manner of their inclusion in mortuary rites, and to what extent these vary with different aspects of human social identity.
3. Building on Objective 2, to discuss how animals are used in the mortuary rite as a burial choice which reflects different aspects of belief or identity, including:
   a. Their use in cremation burials vs. inhumation burial.
   b. Their relation to the age or sex of the deceased.
   c. Regional and inter-cemetery variation in practices.
   d. The influence in the 7th century of Christianity and of new models of elite burial.

Objective 1 asks how data can best be obtained / collected to ensure both comparability and validity over a wide range of different cemetery sites. With the potential dataset from Anglo-Saxon cemeteries including excavations from a wide date range and multiple different analysts, as well as two different rites with different taphonomic implications for the bone assemblage, there is a real necessity to ensure that the data collected accurately reflects past practices as far as possible by taking into account any potential data biases. These issues are explored in Chapter 3 (Data Quality and Validity) and the results from this inform the methodology used in data collection for the Eastern England case study (Chapter 4: Collecting a Dataset).

Objective 2 considers the roles each of the multiple different animal species included in burials play. It is clear from sites such as Spong Hill that there are differences in frequency of inclusion and treatment between horses, other domestic animals and wild animals, indicating different roles in the burial process and in Anglo-Saxon cosmology. Discussing “animals” in burials as a whole is insufficient, since for example the inclusion of a horse and the inclusion of a chicken in a burial are substantially different processes and experiences. Chapter 5 (Animals in Graves in Early Anglo-Saxon Eastern England) separates the Eastern England case study dataset by taxon, giving an effective grounding to the role of each animal in Anglo-Saxon mortuary practice, and beyond this, in broader cosmology.

Objective 3 then returns to the larger research question, asking overall how specific elements of identity (regional, wealth, age, sex), belief (Christianity) and other parts of burial choice (rite) affect the inclusion of animals in mortuary practices. Some of these questions, particularly the inclusion of animals with people of certain age or sex categories, have often been considered at the level of the cemetery report (e.g. Hills & Lucy 2013), but for others, the lack of a regional case study comprising both cremation and inhumation burials mean they have gone largely unaddressed. This is discussed in Chapter 6 (Creating the Grave: Animals and Identity in Mortuary Ritual).

The remainder of this chapter and the following chapter, therefore, serve to introduce the area and scope of the research. Chapter 2 (The Nature of Belief) discusses previous research into animals in mortuary ritual in Anglo-Saxon England, and sets the theoretical context of the study. This chapter defines the boundaries of the project spatially, temporally, and in terms of the material included, and a short overview of the early Anglo-Saxon period is also included.

1.2 Locating the Project

1.2.1 Defining Animal Remains

Conventionally, the role of animals in mortuary practices is expected to be as a grave good, placed in the same grave as the corpse in an inhumation burial, or included on the pyre and then as cremated bone within a cremation burial. However, this stands as a relatively narrow definition. For the purposes of this project, animal remains are considered to be in mortuary context or otherwise associated with funerary practices if they occur within the bounds of a recognised cemetery site and are contemporary with the burials. This includes any individual burials of animals (Associated Bone

Groups; Morris 2011) which are not directly associated with human burials, as well as any contemporary disarticulated refuse, as both of these may provide important information about funerary practices or beliefs beyond the finished grave.

The definition of “animal remains” includes all evidence which is commonly within the remit of zooarchaeology - i.e. bones, teeth, horncore and antler which has not been otherwise worked into an object. The exception to this is curated bone artefacts – minimally worked or unworked pieces of bone or teeth with no evident function, which still resemble the element of the animal from which they derive (e.g. perforated teeth, decorated astragali). These straddle the boundary between object and animal, and may be considered in cemetery reports either as “small finds” or grave goods, or as part of the general zooarchaeological assemblage. Curated bone is included in datasets, as there is often a clear link perceived between the bone and the animal from which it derives. Furs and other organic animal remains have not been systematically included within datasets, except on rare occasion where an organic sand or soil stain is clearly considered to derive from an animal or animal portion.

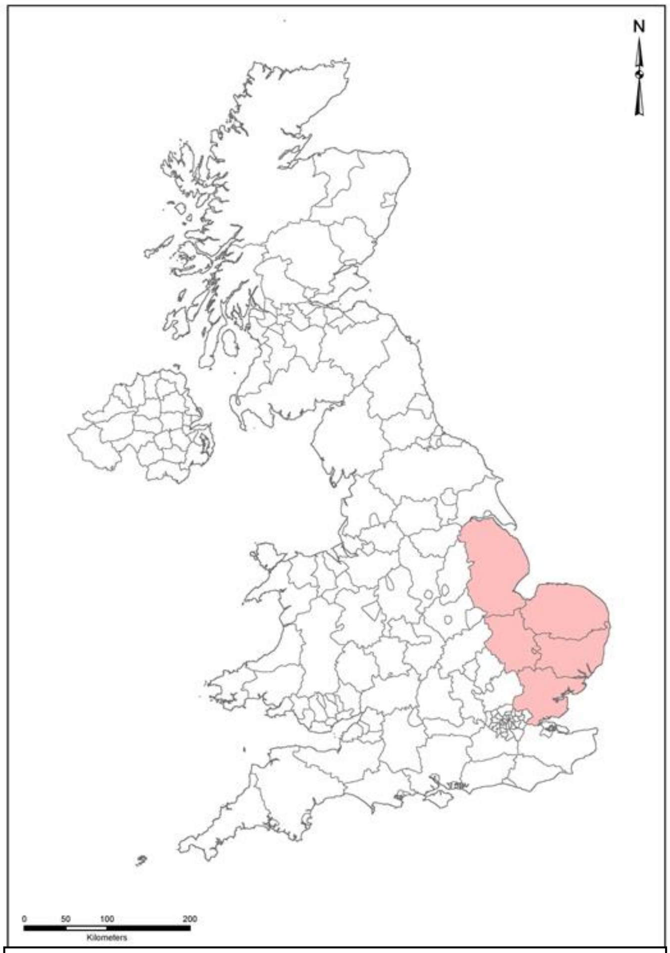

Figure 1.1: Area of the Eastern England case study (marked in red).

1.2.2 Temporal and Spatial Boundaries

The focus of this project is mortuary practices involving animal remains in the early Anglo-Saxon period, which is dated conventionally from the end of Roman Britain and the first evidence of Germanic-influenced burials (c.450AD) to the end of furnished burial and the adoption of Christianity in the late 7th or early 8th centuries AD (see Section 1.3, below). No contemporary textual or historical sources survive from England from the 5th to 7th centuries, although later sources have been used to shed light on this earlier period (Chapter 2). While little data is included from the middle and later Anglo-Saxon periods (8th to 11th centuries AD), these periods are described in order to set the earlier evidence and historical sources into context.

The area of the Eastern England case study is defined by the five post-1960 counties of Lincolnshire, Norfolk, Suffolk, Essex and Cambridgeshire (Figure 1.1). The county of Lincolnshire is also taken to include the two unitary authorities of North-East Lincolnshire and North Lincolnshire, which operate separate Historic Environment Records to Lincolnshire (Chapter 4). This area crosses a number of different 8th and 9th century kingdoms, from the classically "Anglian" area of Norfolk and Suffolk to the Saxon kingdom of Essex (Section 1.3; Higham & Ryan 2013). In terms of burial practices, it

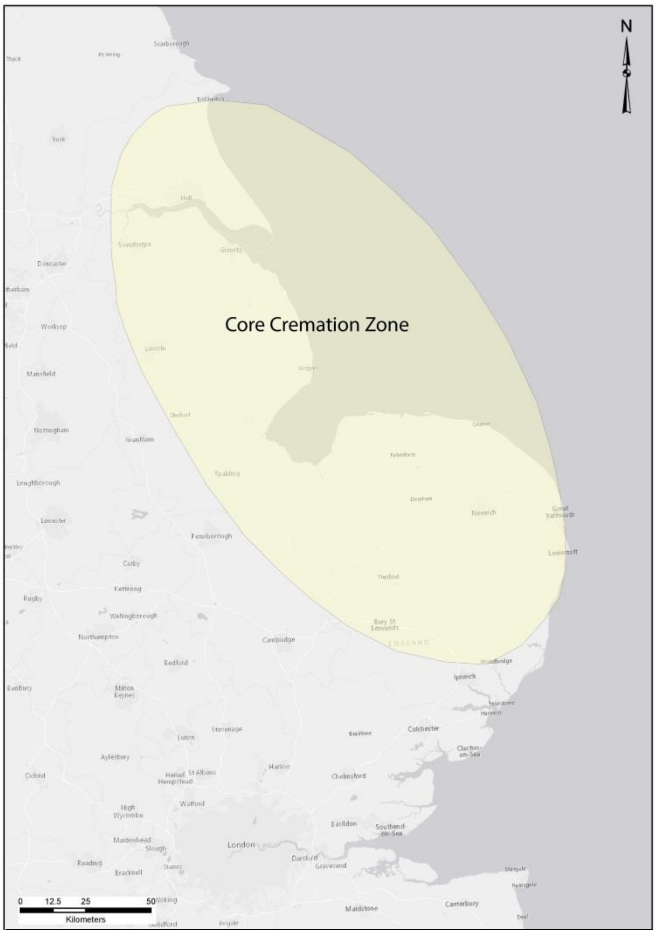

Figure 1.2: Location of Core Cremation Zone (Hills & Lucy 2013). After McCullough-French (2017)

incorporates both the 5th-6th century Core Cremation Zone, an area broadly including Norfolk and eastern Lincolnshire defined by the presence of extensive single-rite cremation cemeteries (Hills & Lucy 2013; Figure 1.2), and areas outside of this zone, which are characterised by smaller, mixed rite cemeteries (Section 1.3). Eastern England, as defined here, also includes some of the most significant and well-studied cemeteries from the early Anglo-Saxon period, such as the 5th-6th century cremation cemetery of Spong Hill (e.g. McKinley 1993, Hills & Lucy 2013) and the 6th-7th century princely burial sites at Snape (Filmer-Sankey & Pestell 2001), Sutton Hoo (Carver 2005) and Prittlewell (Hirst 2004) (Chapter 2).

1.2.3 Role of the Norfolk CDA

This PhD was funded as an AHRC-CDA (Collaborative Doctoral Award) in association with Norwich Castle Museum and Art Gallery, with the original intention of a focused reassessment of the evidence for animals in mortuary ritual in Norfolk. However, due to unforeseeable problems in terms of the lack of primary data available (see Chapter 3), this proved impractical, and the scope and direction of the study were expanded to its current state.

The influence of the CDA can be seen largely in the privileged access this provided to the large collections held by Norwich Castle Museum. Norfolk Museums Service is the designated county repository for archaeological collections from Norfolk, and it holds collections of Anglo-Saxon material from across the county from antiquarian excavations through to modern commercial archives. The author spent the majority of the second year of research based in the archaeology department at Norwich Castle Museum, working with the archives and collections available through the museum. This facilitated many of the aspects of the data quality survey of the county presented in Section 3.2, as unlike most researchers I had direct access to both the collections and collections catalogue and was not reliant on second-hand information from curatorial staff when attempting to understand the state or location of the archives. More importantly, this provided a designated starting point for primary data collection. In terms of practicalities, the majority of research projects which require primary data collection approach the problem by selecting sites to analyse and then approaching museums to gain access to these specific site archives. This presents two problems. Firstly, archives can prove either difficult to locate, difficult to access, or both – a problem which results from the complexity of curatorial and archiving policies, particularly for older sites, and increasing financial and time constraints within museum services. From the author's own experience in trying to access the Snape archive, the part of the archive which was reportedly held by Ipswich Museum was unable to be located and therefore could not be included with the rest of the material in the study (see Chapter 3). Similar difficulties with locating cemetery archives are reported by

McCullough-French (2017: 150-152). Additionally, institution-specific regulations regarding the handling of human bone and whether or not this can be removed from museum or unit premises, while often necessary for compliance with ethical guidelines, can also pose problems for the average zooarchaeologist in terms of travel costs and isolation from appropriate reference material and expertise available in lab environments. By working as an associate with a specific collection, these problems were almost entirely circumvented. In many cases the arrangement was also beneficial to the museum and improved the overall quality of the Anglo-Saxon cemetery archives, by generating new knowledge about their quality (or lack of), and also in consolidating archives by relabelling or rebagging material where this was needed.

Secondly, and perhaps as importantly, the method of site selection from secondary information tends to favour published sites, since these are the sites from which information is most readily available. The simple fact that everybody knows about these sites can lead in some cases – such as, arguably, Spong Hill – to these sites being overly studied while other, less well-known sites, are relatively neglected. The advantage of a designated collection is that it circumvents this problem, as collections will typically contain both well-known and obscure archives. Of these, it is often the obscure archives which offer the greater opportunity, as these may be unpublished and in need of reassessment, or, in cases such as Field Dalling, have never been studied and are in need of assessment. In cases such as these, where there is no funding attached any longer to the archive, inclusion in a broader research project may be the only way for these archives to ever be reported, and take the first step from untouched boxes in a store to forming part of a useful archive from which further research can be generated. Meanwhile, their inclusion in the project serves to broaden the research beyond the sites which everybody knows. For all of these reasons, the primary data used in the study derives predominantly from Norfolk.

1.3 Early Anglo-Saxon England: Society, Burial and Belief

The early Anglo-Saxon period is a short but distinct period of British history, covering less than three hundred years between Roman colonial rule on the one hand and the re-emergence of an insular urbanism and complex economy and the beginnings of the Christian medieval period on the other. This period has been seen as an illiterate Dark Age, a post-colonial period marked by a return to pagan belief, a period of mass migration and settlement by Germanic tribes, and the beginnings of "England" (Lucy 2000, Dark 2000, Higham & Ryan 2013). All of these definitions are to some extent true, and elucidate or conceal different aspects of the period. The following summary introduces early Anglo-Saxon England in terms of three aspects which are relevant to animals and mortuary practices: the nature of society, burial practices, and changing religious beliefs and the impact of Christianity.

1.3.1 Society

The beginning of the Anglo-Saxon period is conventionally placed in the early fifth century (c.430AD), following the collapse of the Roman empire and removal of Roman rule from Britain in the late 4th and early 5th centuries (Higham & Ryan 2013). Later accounts from the 6th-8th centuries AD such as Gildas (*De Excidio et Conquestu Brittaniae*) and Bede (*Historia ecclesiastica gentis Anglorum*) recount the migration of Angles, Saxons and Jutes from northern Germany and southern Scandinavia into south and eastern England, citing these as the origin of different tribal kingdoms. These accounts are corroborated by changes from the early 5th century in material culture, settlement patterns, language and burial customs, much of which implies Germanic influence (Higham & Ryan 2013). These changes are also predominantly focused towards the south and eastern areas of the country, with western Britain – the wealthiest area in the later Roman period – arguably retaining Romano-British characteristics for several centuries (Dark 2000). Within the Anglo-Saxon area of England, there is substantial regional variation, with East Anglia and Lincolnshire unique in terms of burial traditions (see below), and differences in material culture between Kent and

“Anglian” regions (Higham & Ryan 2013; Owen-Crocker 2011). Traditionally, this variation was interpreted as the dominance of peoples from different areas of the Continent in different areas of England (e.g. Angles in East Anglia and Jutes in Kent), although the situation is now considered to be vastly more complex (Higham & Ryan 2013). The scale and nature of migration from the Continent in the fifth century has been much debated, with models ranging from minimal migration (e.g. Pryor 2004) to elite dominance leading to acculturation, to mass migration and large-scale population replacement (Brugmann 2011). Genetic studies, both of ancient and modern DNA, have provided useful contributions and sometimes contentious models (e.g. Thomas et al. 2006, who proposed racial discrimination between Anglo-Saxon immigrants and native Britons leading to a higher contribution to gene pool from the Anglo-Saxon males), although consensus is still elusive (Hedges 2011).

Regardless of the origin of those doing the living, most settlement in the early Anglo-Saxon period can be described as small-scale and based around non-specialist subsistence farming, with little evidence for hunting and fishing (O’Connor 2011; Sykes 2011; Higham & Ryan 2013; see also Chapter 2). Roman urban centres collapsed with the withdrawal of Roman support at the end of the 4th century, although some smaller-scale activity continued in many towns (Speed 2014; Hammon 2011). In the countryside, there is some evidence of continuity in the use of field systems between the Roman and Anglo-Saxon period, although most settlements are new foundations (Higham & Ryan 2013). The evidence for early Anglo-Saxon settlement remains relatively sparse compared to earlier and later period, although in East Anglia the extensively-excavated West Stow provides an important wealth of evidence (West 1985; Crabtree 1989).

The resumption of historical records is coincident with the reintroduction of Christianity to Britain from the late 6th century (see below). While there is little archaeological evidence from the earliest part of the Anglo-Saxon period to suggest a developed social hierarchy, the existence of tribal kingdoms in the 6th century is clear from the recorded history of their conversion (Higham & Ryan 2013). Among the larger kingdoms in eastern England listed either in

Bede or the 7th century Tribal Hidage are Northumbria, Lindisfarne (or Lindsey), located approximately in Lincolnshire, the East Angles (Norfolk and Suffolk), and the East Saxons (Essex), along with multiple other smaller kingdoms which have not survived into modern place-names (Higham & Ryan 2013: 140). These were consolidated into larger kingdoms, such as Wessex and Mercia, through the 8th and 9th centuries. Elites were sustained via a system of food renders and tributes from client kingdoms, and a warband was attached to its leader through his continued provision of food and gifts (Pollington 2003).

The end of the early Anglo-Saxon period is defined as the end of the 7th century AD, coincident with end of furnished burial and the establishment of Christianity (see below). However, major economic and social changes are evident from the 8th century, including the development of proto-urban trade centres (Pestell 2011), and increased specialisation in farming (Chapter 2), both of which indicate a more developed political economy. While burial and belief may have undergone the most evident changes at this point, it is important to remember that these are not isolated from the substantial social changes of the Middle Saxon period.

1.3.2 Burial

From the 5th century, both cremation and furnished inhumation were in use as contemporary burial rites, in contrast to the later Roman period where unfurnished inhumation was standard. Most Anglo-Saxon cemeteries appear to be new foundations, with little evidence of continuity from the preceding Romano-British period (Dickinson 2011). While both practices co-existed between the later 5th to late 6th centuries, cremation burial appears to have begun slightly earlier, in the mid-5th century, while furnished inhumation was widespread by the later 5th century (Lucy 2000). While cemeteries are typically dominated by one or other rite, it is also very typical that a largely inhumation cemetery will contain a few cremation burials, and vice versa, with some cemeteries substantially mixed. Cremation burial is generally characterised by cremated bones and cremated grave goods placed into an urn which is typically ceramic and decorated with stamp imprints, although unurned burials are known, as well as burials placed into more elaborate vessels, usually bronze. Pyre sites have proved difficult to identify, limiting what can be said regarding the process of cremation, although it is considered likely that cremation pyres were loosely built wooden structures, placed directly on the ground. The weight of excavated cremations is substantially less than that which could be expected from a complete human cremation, indicating the probability that collection of remains from the burnt-out pyre was incomplete (McKinley 1994; see Chapter 5.3). Early inhumation burial is characterised by furnished graves in specific grave costumes, although there is substantial variation in the wealth of furnishings provided between individuals. Many grave goods and costumes appear to be strongly gendered, and also appropriate only to certain age groups (Lucy 2011). There is currently no consensus explanation as to the factors which drive the choice between inhumation or cremation as a burial practice – while there are regional and temporal trends (see below), the two rites broadly seem to co-exist as options in a burial record which seems to offer substantial scope for choice (Dickinson 2011).

While practices are broadly similar across Britain, there is some clear regional variation. Most significantly, cremation cemeteries are more commonly found in the east of England. Very large cremation cemeteries – numbering into the hundreds or thousands of cremations, and typically containing very few inhumation burials – in particular appear to be confined to an area which runs from the Humber to around the modern county boundary between Norfolk and Suffolk (Figure 1.2, above), termed the Core Cremation Zone (Hills & Lucy 2013). Further west, from the Midlands, the pattern appears to be of smaller, mixed-rite cemeteries (Lucy 2000), while in Wiltshire burials pre-dating the 7th century have only been found in the eastern half of the county, suggesting that this was the far western border of Anglo-Saxon influence (Eagles 2001). There is similarly little evidence for Anglo-Saxon style burials in the north-west of England (Lucy 2000), and recent genetic studies suggest that this area may have beyond the settlement limit of Anglo-Saxon migrants (Harding et al. 2010).

From the late 6th century, the burial record shows more evidence of social inequality, in terms of a developing culture of elite burial, and other concurrent changes reflect the influence of Christianity. Burial under barrow mounds (barrow burial) and/or in wooden chambers (chamber burial) is adopted from the later 6th century onwards (Pollington 2008). These “princely” burials are typically elaborately furnished, both in terms of portable wealth items representing the roles of an elite warrior or leader, and in some cases in terms of the actual grave construction. Whilst some burials are simply placed as typical inhumation or cremation burials under a barrow mound, or within or associated with a prehistoric barrow mound, other inhumation burials are more structurally complex. Ship burials, such as at Snape or the famous Sutton Hoo Mound 1, are uncommon. More usual are burials within a wooden chamber, such as the princely burial at Prittlewell, Essex (Hirst 2004), within which chamber the corpse and items have been carefully arranged in what can be argued to be an elaboration of the normal “grave tableaux”. From the 7th century onwards, “bed burials” are also found, wherein the corpse is laid on a couch or bed within the chamber, such as at Swallowcliffe Down, Wiltshire (Speake 1989). These burials are initially associated with males who are considered to be military or political leaders and are associated with the development of kingdoms and elite power (Welch 2011), although barrow and bed burial is increasingly adopted for wealthy women during the 7th century (Welch 2011), as political power becomes associated instead with Christianity. The practice of elite furnished burial ends entirely by the beginning of the eighth century.

Concurrent with the development of princely burial, more ordinary burials also undergo changes during the late 6th and 7th centuries. Cremation burial becomes substantially less common, except in Sussex and Hampshire, where cremation cemeteries persist until the end of the seventh century (Down & Welch 1990; Stoodley 2010). In terms of inhumation burial, a “Final Phase” of furnished burial has long been distinguished, which is characterised by sparsely furnished graves and specific artefact types with a supra-regional distribution (Welch 2011), and is coincident with the reintroduction of Christian beliefs (Higham & Ryan 2013; see below). Many of the Final Phase cemeteries are new foundations, geographically separate from earlier pagan cemeteries, although in other cemeteries Final Phase burials form a discrete grouping within the main cemetery area.

Unfurnished east-west inhumation was introduced from the 8th century, although churchyard burial was not standard practice until the 10th century (Blair 2005). Furnished burial ends as a common practice by 730AD, although a recent dating project has suggested a much earlier end-date, in the last quarter of the 7th century (Bayliss & Hines 2013; see below). The inclusion of some sparse grave goods, predominantly with Christian symbolism, persists throughout the medieval period (Gilchrist 2008). The advent of the Vikings, at the end of the eighth and into the ninth centuries, appears to have had little impact on burial practice, even in the northern and eastern areas which for some time fell under Viking control. While there is good evidence elsewhere in the archaeological record of the reintroduction of pagan beliefs and syncretism with Christianity, this was not expressed within mortuary rites, with the dominant burial practice remaining as unfurnished east-west inhumation. The most notable exception to this is the Viking cremation cemetery at Heath Wood, Derbyshire, which follows the older rites of cremation with grave goods and animals still prevalent in Scandinavia (Richards et al. 2004) – however, this remains a unique site.

1.3.3 Belief

Belief in the early Anglo-Saxon period is also considered to have been heavily influenced by Germanic and Scandinavian paganism (Carver et al. 2010, Pluskowski 2010). Along with the rest of the Roman empire, Christianity became the dominant religious force within Britain during the 4th century, largely supplanting Roman multi-theistic paganism (Philpott 1991). Following the Anglo-Saxon conquest, there is little evidence for Christianity in the east of the country, until its reintroduction from the Continent in the later 6th century. Evidence for the nature of paganism in early Anglo-Saxon England is diffuse, but the emerging consensus is that this is focused around the natural world and contains elements of shamanic belief which do not see a distinction between the animal and human world (e.g. Bond & Worley 2006, Carver et al. 2010, Pluskowski 2011, see also Chapter 2). Specific pagan beliefs, however, are increasingly considered to show considerable variation between communities (Carver 2010).

The period during which paganism was the dominant force in Britain is short, with Bede reporting that the first mission to re-evangelise England was sent from the continent by Pope Gregory in AD597 (Blair 2005). Led by Augustine, the mission established a centre in Canterbury where there was already a Christian political presence in the person of Bertha, wife of King Aethelbert, and a refurbished Late Roman church (St Martin's Canterbury, est. c.580AD) (Blair 2005). Bede's account of the spread of Christianity across England focuses on the Roman missions and the political conversions of kings, and it is clear that until the late 7th century this was a patchy process, with as many apostasies as conversions. The first record of Christianity in East Anglia is early in the 7th century, with the conversion of Raedwald (c.604AD), and subsequently the establishment of Sigeberht as the region's first Christian king in 630AD (Hoggett 2010). A second strand of Christianity, deriving from Irish sources, was introduced in the 630s to the kingdom of Northumbria from Iona, leading to the foundation of the monastery at Lindisfarne (Higham & Ryan 2013). By the second half of the 7th century, Christianity was established across most of England, at least on a political level, and in 664AD the Synod of Whitby reunited the various strands of Christianity, with precedence given to the Roman church (Blair 2005). The abandonment of furnished burial has recently been redated to the last quarter of the 7th century, which the authors have suggested may have also been a consequence of decisions taken at the Synod of Whitby and the influence of Theodore as head of the English church between 668 and 690AD (Bayliss & Hines 2013: 473).

Beyond its political adoption, the prevalence of Christian beliefs among the general populace during the 7th century and later is more difficult to judge. Archaeologically, both monasteries and churches were founded during the 7th century which would have established a foothold for Christianity within a region, many of which aligned themselves physically with Roman remains.

Final Phase burial in the 7th century (discussed above) is considered also to be Christian-influenced. However, the persistent influence of pagan “folk” beliefs and substantial syncretism in Anglo-Saxon Christianity at a local level has also been argued (e.g. Pluskowski & Patrick 2003; Jolly 1996). Where possible, many of the communal pagan beliefs and practices which played an important role in rural life, such as blessing the harvest or administering healing, were simply adopted into a Christian context with the Christian God acknowledged as the source of power behind rituals. These often included a Christian priest as practitioner, and elements such as the Eucharist, holy water, or passages from the Bible as transmitting power (Jolly 1996). Other parts of pagan practice which ran counter to Christian power – either through their incompatibility with Christian belief or by suggesting a different source of power to the Christian God - were demonised. These included sacrifice of animals, as attested by Bede’s comment that the Anglo-Saxons sacrificed many cattle *to demons* (Bede, *trans.* Sherley-Price 1990), and also various aspects of divination through animal behaviour, condemned as un-Christian in Aelfric’s 10th century “Lives of Saints” (Poole 2013a). Where they could be incorporated, aspects of paganism may have had a long duration in Anglo-Saxon England, and even beyond. Bede records the instruction of Pope Gregory to the English Bishop Mellitus that, where possible, pagan practices including festivals should be adapted for Christian use (Jolly 1996: 25), and Christian festivals which survive today, such as All Hallow’s Eve, are popularly believed to have been transformations of pagan festivals (Rogers 2002). What is much more unknown is the extent to which fourth-century Christianity and even earlier Roman and local paganisms survived in England beyond the end of the Roman Empire, particularly in the Anglo-Saxon east of the country, and how these may have influenced later religious developments.

1.3.4 Conclusions

The early Anglo-Saxon period can be described as a beginning of a new England (Higham & Ryan 2013), or as a unique period of *interregnum* between the Roman and medieval worlds (McCullough-French 2017).

However, these may underplay the relevance of what preceded this period, both in England and on the Continent. In Scandinavia, which fell outside both the rule of the Roman empire and the influence of early Christian missionaries, the Iron Age runs from 500BC to 1050AD (Jennbert 2011: 14). The Germanic and Scandinavian beliefs and customs from which much of early Anglo-Saxon culture derives were largely imported from areas which were similarly outside the control of Roman colonialism, where their development was uninterrupted from the late Iron Age (Hedeager 2011; Jennbert 2011; Hills & Lucy 2013; Pluskowski 2010). In Anglo-Saxon England this arguably amounted to a reimportation of beliefs in which animals played a central role (Pluskowski 2010), considering the "shamanic" symbols and strong symbolism of the horse on Iron Age coins (Creighton 2000) and the well-known "special" deposits of animal remains in pits in Iron Age hillforts (e.g. Hill 1995; Morris 2011). The early Anglo-Saxon period can be viewed as the end to a long period of changing and multiple beliefs, before the wholesale adoption of Christianity which remained the majority faith until modern times (Blair 2005; Higham & Ryan 2013: 163-165). The three hundred years until the eighth century represent a world on the brink of fundamental transformation, from the prehistoric to the medieval period, both in terms of social developments and in terms of cosmology. The place of animals in belief and society across this period is of substantial interest in terms of these changing cosmologies and in understanding their role in mortuary practices, and it is this which is discussed in the next chapter.

Chapter 2: The Nature of Belief

2.1 Animal Remains in Anglo-Saxon Mortuary Context: A Short Historiography

Animal offerings in graves have a wide temporal scope in Britain, with horse graves and animal offerings within cremations known from the Iron Age (e.g. McKinley et al. 1997, Wait 1985). Animal offerings were also present in Roman graves and cremations (Barber & Bowsher 2000, White 2011, Worley 2010). Nor are animal offerings a specifically British practice in the post-Roman period. The practice was widespread in distribution across Continental Europe, with the possible exception of Frankia, as attested by distributions of horse burials (Müller-Wille 1970/1); and diverse in terms of taxa. A significant body of research and interpretation has focused on animal offerings from the Scandinavian Late Iron Age, with cremated material assessed at an early date (Gejvall 1969), and animal remains frequently incorporated into studies of Late Iron Age worldviews and mythologies (e.g. Gräslund 1980; Hedeager 2011; Jennbert 2006, 2011). Similarly, even in Anglo-Saxon England, animal remains which can be interpreted as ritual are found not only in graves and cemeteries, but are present also in settlements as e.g. foundation deposits (Crabtree 2012; Hamerow 2006; Morris & Jervis 2011). The practice of including animal offerings in Anglo-Saxon graves, therefore, should be seen as only one instance within a broad temporal and geographical context of animal offerings.

2.1.1 Origins

The excavation of Anglo-Saxon burials – both cremation and inhumation - has a long history. Occasional burials were dug during the later medieval period, and more frequent excavations were carried out from the eighteenth century, although the burials were not dated to the Anglo-Saxon period until the late nineteenth century (Lucy 2000). The presence of animal remains in inhumation graves has often been recorded where apparent, for example at Foulden, Norfolk, where excavations in 1931 recovered a male burial with an accompanying dog (Meaney 1964). Horses and dogs were most apparent in inhumation graves, as they typically occur either whole or as recognisable parts (see below; Prummel 1992), and these types of animal offerings may easily have been recorded preferentially to less-obvious parts of animals in early excavations (Nicholson 1998). Cremated bone is substantially more problematic to identify than non-cremated material, and the presence of animal remains in cremation cemeteries can be expected to be under-reported until relatively recently (see discussion below). However, cremated animal remains were occasionally recognised, as at the cemetery of Caistor-by-Norwich, excavated in the 1930s by F.R. Mann (Myres & Green 1973), although in this instance recognition unfortunately did not equate to retention (Chapter 3). Interpretations of animal remains were limited – most were assumed to be food offerings (e.g. Lethbridge 1938), while dogs were interpreted as personal possessions and horses as part of a warrior identity. Very few interpretations discussed magical or ritual properties of animal remains. One exception is Lethbridge’s interpretation of antler in a male cremation in Lackford, Suffolk, which he suggests might be linked to magical or shamanistic activity (Lethbridge 1951).

While sporadic reporting such as that described above was sufficient to create an awareness of the existence of animal remains in Anglo-Saxon graves, little further attention was paid to these remains until the late 1980s and early 1990s. This can arguably be attributed to the broader theoretical development within archaeology in general and zooarchaeology in particular. Processual archaeology, in the 1960s and 1970s, focused on describing the economic bases of society. Ritual and religion, at the top of Hawkes’ Ladder of Inference (Hawkes 1954), were considered to be areas largely inaccessible to archaeology (Johnson 1999). The development of new theoretical approaches in the 1980s led to research into symbolic, ritual and religious behaviour in the past (Johnson 1999). Zooarchaeology, however, remains a relatively-conservative branch of archaeology, as many of its methods were developed in the era of processual archaeology (Russell

2012). Although there is now a burgeoning field of “social” zooarchaeology, which includes the study of ritual practices (Russell 2012), the discipline remains traditionally interested in the study of economy and trade, as evinced by the fact that most commercial or grey literature “bone reports” will describe assemblages in terms of husbandry decisions, culling practices to maximise economic use of animals, and trade and distribution of different parts of the animal (Sykes 2014). This long-term unwillingness to engage with explicit evidence of ritual practices – such as the placing of animal remains in Anglo-Saxon graves – has meant that while there has been a steady accumulation of evidence in some areas, systematic analysis of this has been confined to studies carried out within the past 25 years, few of which have been conducted by zooarchaeologists. This unfortunately has implications for the way material has been collected, stored and reported, and the information which may remain available in archives. This is further discussed in Chapter 3.

2.1.2 Cremations and Inhumations: Bodies of Evidence

Research on animal remains in cremations and inhumations has taken slightly different respective routes, although the general background outlined above is correct for both rites. It is generally accepted that animal remains are more frequently found with cremation burials than with inhumations (eg. Crabtree 1995; Williams 2001, 2005). This is apparent from cremation sites such as Spong Hill, Norfolk, where 46.4% of burials yielded animal bone (Bond 1994), as compared to inhumation cemeteries such as Castledyke South, Lincolnshire, where only 16% of graves contained animal bone (Nicholson 1998). It is also borne out by the evidence from mixed-rite cemeteries such as Snape (Filmer-Sankey & Pestell 2001), where cremations have been demonstrated to include animal remains at a greater frequency than inhumation burials, and the inhumations which include animal remains conform to a model of “rich” graves. However, beyond these comparisons regarding frequency and dating of animal inclusions, studies of animal remains in cremations and in inhumations have taken rather different analytical pathways, and these are described below.

2.1.2.1 Cremation

Animal bone from cremations presents particular methodological problems for identification, as the cremation process leads to very heavy fragmentation, shrinkage and distortion of bone (McKinley & Bond 2001) (Figure 2.1). For many years, cremated bone (human and animal) was largely ignored as a potential source of evidence, on the basis that no useful analysis could be made of it (Gejvall 1969). However, some influential assessments of cremated animal bone were still carried out (eg. Caistor-by-Norwich (Wells 1973a); Sutton Hoo (Gejvall 1975); Newark (Kinsley 1989)). With the exception of Sutton Hoo, these typically demonstrated a frequency of around 15-30% of burials containing animal bone, and sheep/goat as the most common taxon (Richards 1987). Horse remains in cremations were also thought to be represented by head and feet elements only, perhaps indicating that only the animal skin was added to the pyre (Vierck 1970/1).

Figure 2.1: An average cremation burial from Illington, Norfolk, divided into 10mm, 5mm and 2mm fractions (left to right).

Richards' (1987) study of the relationship between the attributes of Early Saxon cremation urns and their social meaning as exemplified by their contents included animal remains as one category of grave goods. Four out of the 18 sites included in Richards' sample included assessments of animal remains which were suitable for inclusion in analysis: Elsham, Lincs.; Illington, Norfolk; Newark, Notts.; and Loveden Hill, Lincs.. Richards concluded that animal remains were more frequently included with male burials, with horses in particular more associated with males than other taxa; and animals, especially horse and cattle, were also more likely to be included with adults than children. Animals remains also tended to occur in taller pots than shorter, and wider pots rather than narrower. However, Richards' conclusions are problematic owing to the data they are based on. This was recorded prior to Bond's work on Spong Hill (Bond 1994), which highlighted that larger animals may be under-identified in cremations due to the tendency for larger elements to fragment heavily, making them less straightforward to identify. The dominance of sheep/goat, noted at all of the sites in this study, is argued to be a common artefact of these fragmentation processes (Bond 1996), and it is therefore necessary to treat Richards' results with caution.

The most significant body of data on Anglo-Saxon cremated animal bone comes from sites assessed by Julie Bond. Of these, Spong Hill yielded the largest quantity of data, with 622 contexts containing animal bone identified to taxon (Bond 1994), and is the site which is most commonly cited in secondary literature (e.g. Crabtree 1995, Williams 2005, Pluskowski 2010, to name but a few). Other sites include Sancton, Yorkshire (Bond 1993), Sutton Hoo, Suffolk (Bond 2005), Tranmer House (Bond & Mustchin 2015), Lakenheath, Suffolk (Bond forthcoming) and the Viking site of Heath Wood, Derbyshire, with Fay Worley (Richards et al 2004). The major conclusions from these sites has been summarised in two review articles (Bond 1996; Bond & Worley 2006). With the exception of Heath Wood, which is both later in period and also currently unique as the only cremation cemetery known from the 9th century and associated with the Scandinavian incursions, all of these cemeteries date to the Early Saxon period and are from the eastern area of England, where cremation was most common. However, there is distinct variation between these cemeteries, with Spong Hill and Sancton characterised as large cemeteries where cremation is the dominant rite, Sutton Hoo and Tranmer House relatively late and high-status mixed rite cemeteries, and Lakenheath a largely inhumation site with few cremation burials.

At Spong Hill, a total of 14 different taxa were identified in cremations. Horse was the most common of these, with sheep/goat the second most common. Other domestic taxa comprised cattle, pig, dog, domestic fowl and domestic goose. Wild taxa included red and roe deer, represented by antler, bear, represented by terminal phalanges, beaver, fox, hare and fish (Bond 1994). This demonstrates a substantially different pattern to the assemblages recovered from settlement sites, where cattle and sheep are the most common taxa, and horse is relatively rare (Crabtree 1995). Element representations suggested that certain taxa were typically included on the pyre as whole animals, including horses (*contra.* Vierck 1971), cattle and dogs, although butchery marks from some cremations indicated that the larger animals may have been dismembered prior to inclusion on the pyre. Sheep/goat and pig occurred both as whole animals and as parts. In a number of instances, only very specific body-parts of taxa were included – bears, for instance, were almost certainly only present as skins, deer as unworked antler, and in some cremations sheep were represented only by astragali which may have functioned as gaming pieces. In terms of age and sex of the humans associated, this is surprisingly similar to Richards (1987) – animal remains were more common with young adults and adults than with infants and juveniles; and a slightly higher number of male cremations than female cremations include animal bone. Male cremations are slightly more likely to contain horses, and there is a wider range of taxa with female cremations than male (McKinley 1994). However, what is perhaps most notable is the fact that sex appears to have had a relatively slight effect on animal inclusions with cremations.

A further point to note is the apparent consistency of cremation practices between cemeteries. Bond has noted substantial similarities between the assemblages from Spong Hill and Sancton, in terms of represented taxa, element representation and butchery patterns, although some differences are notable in the age profiles of the animals (Bond 1993). The age and sex profiles of the humans with which animals are associated also appear similar to Spong Hill (McKinley 1993). While substantially smaller and a much later cemetery in date, the taxon representation at Sutton Hoo also appeared similar, although more restricted (Bond & Worley 2006).

Most recently, the lack of cremation studies outside of East Anglia have prompted a study of cremations from mixed-rite cemeteries across the Midlands (McCullough-French 2017). While the data available to be recorded was unavoidably sparse, this study suggested that a similar range of species were included in cremations in this area, and in some cases at a similar prevalence to some of the East Anglian cemeteries, although due to their smaller size, the overall dataset was much smaller than that available from East Anglia (McCullough-French 2017). In particular, horse was identified from very few cremations, with sheep/goat, domestic bird and medium mammal remains more common (McCullough-French 2017). However, perhaps the most significant conclusion of this research has been in highlighting the lack of cremated bone in stored archives, with the cemeteries in the Midlands particularly hard-hit by the deleterious impact of pre-1960s curation policies (McCullough-French 2017, see also Chapter 3).

Studies of cremated bone have therefore benefitted from the existence of good datasets, predominantly Spong Hill, which has demonstrated the range and diversity of taxa which can be recovered from cremations. However, the dataset for cremated bone remains limited to a few substantial cemeteries in East Anglia and East Yorkshire, with the data from Spong Hill in particular continuing to dominate discussion and interpretation of animal bone in cemeteries. While data from Sancton and sites in the Midlands indicate that the practices associated with inclusion of animal remains in cremations may be consistent over a wide area, further data is needed from a range of cremation sites in order to test how typical Spong Hill really is, although the effect of unsympathetic curation policies are likely to have acted to reduce the number of older archives available for assessment (McCullough-French 2017).

2.1.2.2 Inhumation

In contrast to cremations, inhumation burial contains bone which poses few methodological problems in assessment, and identification of animal bone from inhumation burials is standard practice from most modern excavations (e.g. Snape (Filmer-Sankey & Pestell 2001); Ipswich Buttermarket (Scull 2009); Castledyke South (Nicholson 1998)). However, with a few exceptions, the evidence from inhumation burial has not been systematically reviewed to investigate the diversity, quantity and frequency of animal remains in this rite. Several authors have included brief summaries of animal remains in inhumation burials as illustrative of a broader topic (e.g. Wilson 1992, Lucy 2000), but in these cases the result has been to emphasise the diversity and scope of animal remains rather than to interrogate the data. Aside from these, synthetic work has been directed towards particular categories of evidence. The literature on horse burials is the most extensive of these, and this is discussed separately, below. In the same vein as the horse burial studies is Prummel's (1992) review of dog burials from the 5th to 11th centuries across Northern Europe, including England, Continental Europe and Scandinavia. This assessed the likelihood with which dog burials occurred singly, with humans, and alongside horse burials; and concluded that dogs were more likely to co-occur with horse burials across a Europe-wide context. Dogs were also more frequently male than female, but occurred more often in female graves than horses did. However, while a substantial number of cemeteries were considered across Europe in the study, only six cemeteries (seven burials) from Anglo-Saxon England were included, making the conclusions more relevant for Continental practices than the more insular Anglo-Saxon England (Prummel 1992).

A further synthetic study covering predominantly inhumation burials which can be mentioned is Meaney's (1981) survey of Early Saxon (5th-7th century) amulets. The study covered all Early Saxon graves, and animal remains which fall into Meaney's definition of "amulet" were included. These include teeth: cattle, horse, canine (dog / wolf), boar and beaver; antler; and "miscellaneous" bones, including fish vertebrae, raptor claws and carpals/tarsals of both sheep and cow. This again is intended to highlight the diversity and potential meanings of bones used as amulets, rather than presenting a systematic study of frequency of the amulets, or the age and sex of the people with which they were associated, although these details are in fact frequently recorded.

Perhaps the most interesting assessment of animal remains in inhumation burials is Lee (2007), as part of her study of food offerings in Anglo-Saxon graves. This includes a comparison of the animal bone recorded from

Butler's Field, Gloucestershire (Boyle et al. 1998) and Castledyke South, Lincolnshire (Nicholson 1998). From the assessed sample, Lee distinguishes a number of age and sex-related patterns, such as an association between pig remains and females at Castledyke South, and domestic fowl with mature adults at Butler's Field (Lee 2007: 64). Spatial patterning is also distinguished at Castledyke, in the case of four graves adjacent to one another which contained domestic fowl; and in both cemeteries, graves belonging to the 5th century are distinguished from those belonging to the 6th century in order to explore distinctions over time. Lee incorporates both bone associated with the skeleton (traditionally interpreted as grave goods) and animal bone recovered from grave fills in her analysis, suggesting that material from fills may represent the remnants of feasting by the grave side (Lee 2007: 67). While this is an attractive idea, the provenance of animal remains in grave fills is somewhat difficult to ascertain, as they are affected by residuality and incidental incorporation of surface material in a way that material directly associated with the skeleton is more rarely, meaning that there is no guarantee that these remains are from mortuary feasting (see Chapter 3).

One further point which deserves mention is the occasional presence of deposits of animal remains outside of graves within a cemetery. Horse burials without an accompanying human are recorded from various cemeteries (see Cross 2011 and below), and Prummel records a small proportion of dog burials without humans in Europe (Prummel 1992). More unusual are deposits such as the cow skull, buried nose-down in a pit in Soham, Cambridgeshire (Lethbridge 1933), or Grave 37 from Caistor-by-Norwich, where the skeleton was described by F.R. Mann as being "under many bones of the ox and pig" (Myres & Green 1973: 230). While deposits of animal remains not directly associated with burials are rarely mentioned in the literature and may be uncommon, the possibility of their presence should not be ignored.

2.1.3 Flogging a Dead Horse? Anglo-Saxon Horse Burials and Mortuary Ritual

Horse burials are a particular category of evidence where research has been more intensive than elsewhere in the field of Anglo-Saxon animals in mortuary ritual. Horse burials are relatively obvious in excavation, and therefore more demanding of explanation than, for instance, a chicken skeleton may be. Horses or parts of horses are often found as part of rich or striking graves in Britain (e.g. Snape (Filmer-Sankey & Pestell 2001), Lakenheath (O'Connor unpub.)), or, in the case of Sutton Hoo, as part of an unusual and striking cemetery (Carver 2005) (Figure 2.2). They are also paralleled by highly unusual burials on the Continent and in Scandinavia (e.g. Valsgarde, Sweden (Norr 2008)). Although research into horse burials can be said to run largely parallel to the other categories of evidence described, the increased degree of synthesis of results from various sites has meant that Anglo-Saxon horses are perhaps better understood than most other animals. However, the existence of a body of research looking exclusively at horses has arguably had the effect of making this taxon appear more atypical than it is, and the value of putting these burials into context with other animal remains has been somewhat lost.

Figure 2.2: Human-horse co-burial from Grave 4028, Lakenheath, Suffolk. Photo: Terry O'Connor.

As with other categories of animal remains, cremations were largely ignored until the late 1980s, while horse burials with inhumation graves are typically reported within site reports, or on rare occasions, in separate papers (e.g. O'Connor 1994). However, alongside these, there has been a certain amount of synthesis of data, predominantly from inhumation burials. Müller-Wille (1970/1) presents a wide-ranging survey of horse burials from across Europe, predominantly focused on Continental Europe and into Eastern Europe, but including Anglo-Saxon England (compiled by Vierck 1970/1), and extending as far in both time and area as Viking Age Iceland. Twenty-eight sites are mentioned from Anglo-Saxon England, although as many of these sites were excavated prior to 1900, detailed information is often lacking (Pestell 2001). Vierck's list includes both cremation and inhumation burials, and includes horses at various levels of completeness, from a whole animal to a few elements (Pestell 2001). Subsequent studies have updated this catalogue, omitting cremation burials: Pestell (2001) notes 15 cemeteries with entire horses, four cemeteries with heads and four of unknown type. Fern (2005) records thirty whole or part-articulated burials, of which biographical information (age, sex etc.) was available for 13. Both Fern and Pestell, along with Cross (2011), have also acknowledged the variability shown by horse burials in mortuary context. While thus far only a small amount of information is available regarding horse cremations (see above, and below), inhumation burials include complete or nearly complete horses with humans, complete or nearly complete horses buried alone, parts of horses in human burials (from heads to single teeth or longbones), horses complete with harness, and horse harness only in the human grave (Fern 2007, Pestell 2001, Meaney 1981, Cross 2011).

Several subsequent Continental studies, generally smaller in geographical scope, have contributed to the understanding of the size, age and sex of horses in burial (e.g. Muller 1980, Oexle 1984, Benecke 1986; summarised in O'Connor 1994), and more recent work by Fern has systematically applied this to horse burials from England (2005, 2007). Most horses where sex is identified tend to be male, with both stallions and geldings represented, but few mares present (O'Connor 1994, Fern 2011). Fern notes that horses in inhumation burials tend to be larger in size than those from settlements (Fern 2007, 2011), although O'Connor has suggested previously for the Continental evidence that this may be a result of sexual dimorphism and the bias towards male horses (O'Connor 1994). In terms of age, the horses from

England are largely in their prime, and there are very few examples of immature horses anywhere on the Continent (Fern 2007).

The standard explanation for these horse inhumation burials is that they represent instances of conspicuous consumption, indicating a high-status burial (Piggott 1992, Fern 2007). They are typically associated with male burials, although a few examples of burials with biological females are known (e.g. Sedgeford (Cross 2011), although the dating of this burial remains uncertain). Horses carry implications of mobility, hunting and war, which has often also led to these horses being seen as accompanying burials for "warriors", especially in those cases where weapons are also provided as grave goods (see Lucy 2000). Tenth century lawcodes clearly indicate a value greater than that for other livestock (Cross 2011), and earlier literature also indicates that horses were highly valued (Fern 2007; Poole 2013a).

While the explanation of conspicuous consumption may remain valid, recent research has focused on the possible ritual significance of horse burials. Fern (2010, 2011) has argued for the horse burials as being part of an "active mythology", with horses playing a central role in Anglo-Saxon origin mythology and the funerary sacrifice of horses therefore playing an active role in maintenance and construction of identity in relation to this. A consideration of the mechanics and rare accounts of horse sacrifice emphasise the extent to which this would have been a highly memorable experience in which power relations could have been encoded and negotiated (Price 2010). Fern (2010, 2011) points to the frequency of depictions of the horse in Anglo-Saxon artwork, and to the figures of Hengist (=stallion) and Horsa (=horse) in Anglo-Saxon origin mythology as demonstrations of the ritual and potentially political significance of the horse in Anglo-Saxon culture. Early Christian prohibitions of practices associated with horses, such as horsemeat consumption, divination from the breathings of horses and slitting of horses' nostrils, can also be taken to indicate an important place for horses in Early Anglo-Saxon belief (Fern 2011, Poole 2013a). Horse sacrifice may have been used differently in cremation and inhumation burial, as the use of horses in cremation rites appears different to their use in inhumation, being more frequent and distributed equally between the sexes (Bond 1994, Fern 2011). However, it should be noted that, again, the evidence for cremations is largely derived from Spong Hill, an issue which Fern acknowledges (2011). Further discussion of horses can be found in Chapter 5.2.

2.1.4 Conclusions

From the above summary, it can be readily seen that the literature on animal remains in Anglo-Saxon burials remains relatively small. The results from Spong Hill (Bond 1994) have dominated discussion of animal remains in cemeteries and substantially influenced our current interpretations and understanding of these practices, not least because this is by far the largest single data set available from the British Isles. Horse burials have also provided a substantial focus for research, and synthesis of data. However, while interpretations have proliferated, the data in general remains patchy.

One of the major questions which can be productively asked, therefore, is “how typical is Spong Hill?”. In brief, Spong Hill is a very large Early Saxon cremation cemetery in East Anglia. As discussed above, of the other cremation cemeteries which have been recorded recently by a trained zooarchaeologist, the majority are within the Core Cremation Zone as defined by Hills & Lucy (2013). While there appear to be strong similarities in practice between large single-rite cemeteries in this area (Bond & Worley 2006), other smaller cemeteries such as Tranmer House, Sutton Hoo and Lakenheath have indicated subtle differences from the standard rites (Bond & Mustchin 2015; Bond 2005; Bond forthcoming), although other evidence suggests a basic uniformity in practice which extends beyond East Anglia (McCullough-French 2017). While there has been little synthesis of data from inhumation burials, it is clear, not least from the work done on horse burials, that there are differences between inhumation and cremation rites. Furthermore, it is likely that different sizes and types of cemeteries served different communities and different purposes (e.g. Chester-Kadwell 2009). The issue of potential variability between different types of cemeteries within a region, and across time, is clearly of critical importance and needs to be addressed.

2.2 ReTheorising Animal Inclusions: From Eschatology to Cosmology

While the data on animal remains in cemeteries has remained fairly sparse, interpretations of the published data have proliferated in recent years. Initially, animal remains from cremations and inhumations were considered in terms of their functional attributes, translating their primary role in daily life directly on to the cemetery context. Animals commonly eaten (cows, sheep and pigs) were viewed as food offerings, horses and dogs as personal property, probably of a warrior; single bones closely associated with the body were viewed as decoration or as amulets. More inexplicable deposits, such as the cattle head at Soham (mentioned above), are described as ritual and left at that (e.g. Lethbridge 1933). Simultaneously, the assumption underlying all interpretation of this material was that these animal inclusions carried a religious implication, which was indubitably pagan rather than Christian. The nature of this paganism was little explored and generally considered inaccessible archaeologically until the 1980s and 90s, with early surveys of amulets from graves (Meaney 1981) and Wilson's 1992 review of Anglo-Saxon pagan practices, both of which include animal remains from graves in their corpus of evidence. Over the past twenty years, research into Anglo-Saxon paganism has gathered pace, influenced by similar research trends into Scandinavian Iron Age cosmologies, with a number of influential volumes and papers published (e.g. Carver et al. 2010; Williams 2001; Fern 2005). Both animals and mortuary practices have remained central subjects of enquiry, and these developing viewpoints offer new and productive ways to approach the roles of animals in graves.

2.2.1 Animal Transformations & Shamanism

One of the recent trends in interpreting animals in mortuary context has been the increasing view of Anglo-Saxon paganism as animistic, with shamanistic or ecstatic elements (e.g. Williams 2001; Pluskowski 2010, 2011; Bond & Worley 2006). This is raised in Williams (2001), who highlighted the possibility of shamanistic elements in the cremation ritual, with animal sacrifice a critical component of the transformation of the identity of the dead. Williams' ideas of the identity of the animal "merging" with the identity of the human to form a new, post-death identity, have been criticised for not recognising or explaining the diversity of animal inclusions (e.g. Bond & Worley 2006), but serve to move animals from the position of objects to active participants in funerary ritual.

Both Hedeager (2011) and Pluskowski (2010, 2011) have argued that the animal world forms an organising principle in Scandinavian Iron Age and, by extension, Anglo-Saxon England, since many of the cosmological ideas in early Anglo-Saxon England are considered to derive from a similar origin (Pluskowski 2010). The dominant artistic styles – Sahlin's Style I (5^{th}/6^{th} century) and Style II (6^{th}/7^{th} century) – are heavily focused around animal motifs. These are mostly heavily-stylised, but discernible animals represented include the boar, birds of prey, snakes and wolves (Hedeager 2011), and horses (Fern 2010, 2011). Animal motifs can incorporate or form part of human faces and forms (Figure 2.3), suggesting a concept of mutability, whereby the boundary between "human" and "animal" is porous and shape-changing or adoption of animal characteristics are possibilities (Bond & Worley 2006; Pluskowski 2010). There are multiple examples of shape-changing from Scandinavian mythology, with the trickster Loki

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Figure 2.3: Brooch from Chessell Down, Isle of Wight, showing animal and human ornamentation. From Webster 2012: 16.

an obvious mythological example of one of the race of Asgard who was able to take multiple different animal forms. Other stories include spirit-walking and shape-shifting by specific people, where warriors take the form of a boar or bear for battle or defence while their human body remains in a trance or otherwise out of sight (Hedeager 2011: 81-84). In Scandinavian sources, where people’s names are recorded, there are numerous examples of animal elements being incorporated into these names - Pluskowski suggests a focus for elite names around the major predatory animals (boar, wolf, bear) (Pluskowski 2010), and Jennbert records a far wider range of animals included in both elite and non-elite names, including both predators and non-predatory animals, such as goats (Jennbert 2006: 137).

While ideas of mutability and the intertwining of humans and animals arguably apply across the animal world, it is also easy to highlight several taxa as playing more important ideological roles than others. Pluskowski has suggested a symbolic association between elites and predatory taxa in Anglo-Saxon England, particularly the boar, wolf and eagle, which are all associated with violence or ferocity (Pluskowski 2010: 117). Hedeager suggests a similar association in Scandinavia, with boars, wolves and bears associated with warfare and warriors who sought to adopt their characteristics (Hedeager 2011: 95). However, this symbolism is multifaceted – wolves and eagles, along with ravens, are associated as well with war, the battlefield and violent death, as they are among the animals which scavenge corpses.

Other animals may have more esoteric and less violent symbolism – Hedeager (2011) suggests that snakes in Scandinavian myths are associated with movement between Midgard and other worlds, and birds, especially corvids, are associated with knowledge as they travel long distances, as in the case of Odin’s ravens, Hugin and Munin. In the case of corvids this could also be linked to their curiosity and tendency to “gossip” in pairs and small groups, as well as their role as scavengers suggesting a link with death and the afterlife. The horse, also, appears to hold a specific ideological value. Later indications recorded by Bede suggest that horses may have been used in divination in early Anglo-Saxon England (Fern 2010;

Poole 2013a), and evidence from Scandinavia is rich with examples of horse sacrifice, often in a funerary context (see Williams 2001: 204; Price 2010). The later myth of Odin's horse Sleipnir also demonstrates how a horse can be used to be travel between worlds, a story which has been likened to a shamanic journey (e.g. Williams 2001).

Despite the caution required when relying on later Scandinavian analogies, the basic concept of an animistic cosmology in Anglo-Saxon England appears sound. However, there is some difficulty in applying this to the mortuary evidence. Except for horses, the animals with the greatest apparent ideological weight in England – wild boar, wolf, wild birds (especially predatory), and other wild mammals – have tended to be included infrequently even in cremation assemblages (e.g. Bond & Worley 2006). Instead, assemblages are dominated by domestic mammals, particularly sheep, for which the cosmological or symbolic implications are far less clear. Domestic animals are rarely depicted in either stylised or figurative art (Webster 2011; Hicks 1993), and in story in Scandinavia tend to represent food and the everyday (Jennbert 2011) rather than harnessing or representing any dangerous magical powers. If animals were important in story, myth and belief, it is clear also that some animals were more important than others. This is explored further, below.

2.2.2 The Anglo-Saxon Funeral as Remembrance

While the process of creating the early Anglo-Saxon grave has been an established subject of inquiry for some time (e.g. McKinley 1994), recent theoretical developments have highlighted the process of the funeral and mortuary practices as a means of creating memory and actively constructing and transforming the identity of the dead (e.g. Williams 2010). Price's (2010) discussion of Scandinavian funerary rites serves to highlight the fact that the process of creating a furnished burial, particularly elaborate elite burials, can be a highly dramatic affair. An account by Ibn Fadlan, a tenth century observer of a Viking funeral, describes a high-status funeral as lasting for multiple days, and involving the consumption of significant quantities of alcohol, rape of a slave, and the violent sacrifice and dismemberment of animals including a pair of horses, a hen and a cockerel (Price 2010: 135). The horses are specifically described as being “run until blown and lathered” (Price 2010: 135) before being beheaded, suggesting that animals may have had an active role to play in the funerary rites prior to slaughter. While the accuracy of Ibn Fadlan’s account has been disputed (see discussion in Price 2010: 132-133), several aspects can be substantiated from Anglo-Saxon graves. The more elaborate chamber and ship burials would have taken time to construct, suggesting of necessity a lengthy funeral process (Price 2010), and evidence of mineralised insect remains on grave goods from Snape indicate that even relatively ordinary furnished inhumation graves may have remained open for some time before final burial (Williams 2010; Filmer-Sankey & Pestell 2001), leaving scope for extensive funeral rites and practices. Secondly, several animals from Spong Hill and Sancton show evidence of butchery associated with dismemberment, including one horse with clear evidence of beheading from Sancton (Bond 1993, 1994). While the dismemberment of animals is likely to have been necessary for their effective cremation and sometimes for reserving meat which is not destined for the dead, the process of this dismemberment would have been necessarily bloody and dramatic. This would have been particularly the case in cremations where multiple animals were involved and would have affected the experience of the funeral for all participants, although it is also worth remembering that in the case of animals which are usually butchered (e.g. cattle, sheep, pigs), this may only have been as dramatic as an average domestic butchery process. Price has suggested that the funerary rites may have enacted cosmological and personal stories, on a grander scale in elite burials and on a lesser scale for more ordinary graves (2010: 137). While this is hard to demonstrate, it serves as an important reminder that the process of burial may have carried as much or more meaning than the final result, as is still the case in modern funerals in the Western world.

The focus Price places on the potentially bloody and dramatic process of creating a grave acts as a useful complement to the more standard vision of the furnished grave or pyre as a “tableau”, or a “palimpsest of allusions”

(Carver 2005: 312) – a collection of objects and symbols which materialise the identity of the dead and contextualise it with both the personal and broader, cosmological history (Jennbert 2006; 2011). These “allusions” refer to the meaning and use of the objects in life. Jennbert has suggested a range of meanings for animals in Scandinavian graves, with domestic animals part of a range of symbols indicating wealth, negotiation and communication; and horses, birds of prey and dogs indicating war and hunting (Jennbert 2006: 136). These allusions and symbolisms are drawn from what can be termed “cosmology” in its broadest sense – not focused simply on intangible beliefs, but also encompassing the entire range of interactions with animals and how those animals are perceived on an everyday basis. This includes both familiar and less familiar beliefs, from the pragmatic understanding of a cow as a milk-producer to the belief that certain birds can travel between worlds, or that a bear may be a person who has shape-shifted. While the eschatological aspects of Anglo-Saxon cosmology – those which involve specific beliefs of the afterlife and other worlds – are inaccessible, many other relevant aspects of beliefs about animals which may inform the composition and practice and meaning of funeral rites can be discerned, or at least inferred. Both of these perspectives move the line of enquiry from belief to mortuary practice, and open the possibility of exploring how these practices may vary between graves, and the interaction between cosmology and social identity which may produce this variation.

2.2.3 What did this Sheep Mean To You? Animals, Identity and Cosmology

The “meaning” of animals in mortuary practices is multiple, complex, contextual and ultimately impossible to fully approach. However, while it is impossible to describe fully *what* animals might mean, several aspects of sacrificing an animal (as opposed to an inanimate object) can be highlighted to describe *why* they might be considered meaningful symbols in mortuary context. These can be broken down into four, interrelated aspects:

1. The particular life history of the animal, including its sex, age, colouration, personality and ownership history.
2. The fact that the animal is a representative of its generic taxa or higher-level categorisation – whether by species (e.g. sheep), family (e.g. Corvidae), or category based on experience and encounter (e.g. medium-sized domestic mammal).
3. The fact and phenomenological experience of the sacrifice of the animal. This will alter dependant on the size and behaviour of the animal – the sacrifice of a chicken, for example, being a much less dramatic experience for the observers than the sacrifice of a horse. Similarly, sacrificing animals which are regularly killed for meat – sheep, pigs and cattle – can be expected to be a less shocking experience than the sacrifice of animals such as horses or dogs, where there is no domestic purpose to their deaths.
4. The practical implications of the death of the animal within the community – whether this is a loss of wealth with the sacrifice of larger animals, destruction of animals such as dogs who may have been particularly attached to the dead, or the creation of a funeral feast via the sacrifice of food animals.

All of these factors are interrelated, and all are likely to have impacted on the selection and symbolism of animals in mortuary rituals. Certain aspects of these, especially the life history of the animal, are by and large beyond what can be easily reconstructed from the evidence of the graves. However, many of these aspects are part of lived cosmology, or “Midgard mentality” (Jennbert 2011), which can be accessed via understanding of the roles of animals in Anglo-Saxon life, some aspects of which are explored below.

Variation in the ways that animals were used in mortuary rites across eastern England between the 5th to 7th centuries is an underexplored topic, which has too often been considered homogenous or not considered at all. Increasingly, it has been suggested that paganism and pagan practices were highly variable across Britain in this period (e.g. Carver et al 2010), suggesting an easy source for variation. However, it is clear from the foregoing that eschatological beliefs about animals were mediated and used within a context where animals as active symbols could also mark, represent, and be part of negotiating the transformations both of the dead and of the living community, reforming around the absence of the dead. From this viewpoint, animals in mortuary practices are bound up inextricably with belief, with social identities, and with the remembrance of the dead.

2.3 Animals and Belief Beyond The Grave

Religion and belief are not divorced from other social arenas, and in most cultures across the world provide a structuring principle for many areas of life which are considered entirely “secular” by the West (e.g. Insoll 2004, 23). This shift of perspective, to considering belief as an aspect of what can be termed an “Anglo-Saxon worldview”, has two implications. First, as argued above, belief alone is insufficient to explain the diversity and variation of animal remains used in burial ritual. Instead this is likely to represent the result of a complex intersection between belief, other aspects of socially-constructed identity, and human and animal individual biography. The second implication is that belief, including those involving animals, is not restricted to the cemetery, but in fact permeates Anglo-Saxon culture more widely. Animals are rarely without a substantial weight of associations – in the Roman period, the eagle was a key symbol of imperial power, while ravens or crows possess an otherworldly significance in both Roman and Old Norse belief (Serjeantson & Morris 2011; Jennbert 2011). Key animal symbols in the Christian faith include the lamb as a representation of Christ, and the snake as a representation of the Devil. Hunting in the Late Saxon and medieval periods in England was an important demonstration of power and a metaphor for control of land (Sykes 2011). However, unlike other symbols, animals are alive. They possess agency, are capable of varying forms of interactions with humans, have literal as well as figurative biographies, and have particular needs and affordances in order to live successfully. In order to approach the meaning of animals in burial ritual, it is essential to understand something of what animals meant outside of the context of burial, in Anglo-Saxon life and worldview more generally. This more contextual approach draws on methods used by Jennbert (2011), exploring later prehistoric Scandinavian perceptions of animals in a “Midgard mentality”; and those used by Prummel (2001) to contextualise animal remains in early medieval Frisian cemeteries.

2.3.1 Anglo-Saxon Animals – An Exercise In Source Pluralism

A number of different sources of information are available which contribute to an understanding of the lived context of Anglo-Saxon animals, and which can be used to explore Early Saxon perceptions. While these sources derive from various disciplines, the approach of using them has been termed “source pluralism” (see Banham & Faith 2014).

The most obvious, and arguably the most useful, source of evidence is that of archaeological animal bone from Early Saxon settlement assemblages. This has been reviewed in a number of places (particularly O’Connor 2011; Sykes 2006), and most recently by Matilda Holmes (2014). Unlike zooarchaeological assemblages from cemeteries, Anglo-Saxon settlement evidence has a long history of zooarchaeological assessment and research (e.g. Crabtree 2014, 2012, 1989). These are typically used to discuss site economies and husbandry, but can also provide information on population size and health, consumption practices, craft activities, and normal disposal practices, as well as providing a directly comparable data-set for the cemetery data-set in terms of taxonomic representation, element representation, and taphonomy. Zooarchaeological assemblages from settlements are also available throughout the Anglo-Saxon period, and are therefore highly useful in assessing changes at the end of the 7th century, concurrent with the end of furnished burial.

A second strand of evidence is that of the biological requirements of the animals themselves. Different taxa occupy specific habitats and landscapes, predate or are predated by other species, grow to a certain size, and have certain types of pelt, feathers or meat which may be useful to humans.

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Figure 2.4: Examples of Sahlin's Style I (left) and Style II (right) ornamentation. From Webster 2012: 55-62.

Farming formed the backbone of life for much of Anglo-Saxon society, and when farming activities are taken into account (see Banham & Faith 2014), it is possible to suggest contexts and temporalities in which an ordinary Anglo-Saxon would have encountered different animals, and perhaps their importance in Anglo-Saxon life.

A third strand, which has been used in a number of studies, is Early Saxon animal art and decoration. This includes Sahlin's Style I and II, which represent the iconic images of the period (Webster 2011) (Figure 2.4). This artwork is best known from jewellery and weaponry, much of which is found from furnished inhumation burials. The animals depicted can be argued to represent "animals of the imagination", and therefore potentially a further strand of evidence towards perception of animals. One of the difficulties with these stylised decorations is that it can be problematic to identify the animal represented beyond a general definition of bird or beast (Prummel 2001). These styles also form only a part of the art present in the Early Saxon period – cremation urns, some showing animal decoration, are one example of a different form and medium.

Finally, textual and historical evidence has the potential to be of substantial use in assessing perceptions and uses of animals in the Anglo-Saxon period. However, few or no texts survive from the Early Saxon period in England, as the early Saxon period is characterised by a strong oral tradition and literacy was a development associated with the Christian church from the 7th / 8th century onwards (Higham & Ryan 2013). This means any mention of pagan practices – of which few exist – tend to have been written by those antagonistic to it (e.g. Bede), or are written some time after the Conversion (Meaney 1992). In terms of understanding perceptions of animals, Beowulf is often used (e.g. Prummel 2001), as this is thought to be a later record of an oral poem referring to 5th / 6th century practices (Higham & Ryan 2013). Other authors have used Scandinavian sources and stories as analogy (e.g. Pluskowski 2010), but it is arguable how applicable these are to Anglo-Saxon period England, given that they derive from a different, albeit similar, landscape and culture and also to a slightly later period (c.10th century onwards).

Law codes, land charters and other legal documents are some of the earliest written evidence belonging to the Anglo-Saxon period, with the earliest Kentish law codes dating to the late 6th / early 7th century (Attenborough 1922). These provide information about a different type of perception of animals – predominantly, their perceived value, as well as tangentially of a lot of the activities involving animals in everyday life (e.g. Banham & Faith 2014). Similarly, the late 10th century Aelfric's Colloquy – a conversation script intended as an aid to learning Latin – is also a useful source regarding how animals were perceived and managed in everyday life, as it describes a number of occupations, including ploughman, shepherd, oxherd, hunter, birdcatcher and fisherman (Watkins 1977), although how idealised these descriptions are is uncertain. While these sources are again dated predominantly to the later Saxon period, this information may also be applicable to the earlier period, unless zooarchaeological evidence suggests significant changes have occurred.

Finally, animals are mentioned on occasions in some charm or medical texts, either as part of a cure or as themselves in need of healing (e.g. Meaney 1981; Jolly 1996). These tend again to date to the later Saxon period, and it is questionable whether any of these practices represent early Saxon practices. Major changes in both material aspects of life and in belief occurred during the 7th and 8th centuries AD (Chapter 1 – see also below), making it problematic to assume that later Anglo-Saxon attitudes are a guide to earlier Anglo-Saxon beliefs. Nevertheless, these sources provide information on an aspect of animal use which is unavailable elsewhere, and may be useful as analogy for earlier periods.

2.3.2 Animals in Anglo-Saxon England: Non-mortuary Contexts

2.3.2.1 Early Anglo-Saxon Animals: The Settlement Evidence

This section is intended to review the evidence for the place and roles of animals in Early Saxon life and practice. This is largely based on zooarchaeological evidence recovered from settlements, as this represents the most important source of information dated directly to the period, although other sources may be briefly touched on. There are relatively few Early Saxon sites with substantial zooarchaeological assemblages, and discussion of faunal use in this period has traditionally been dominated by the well-published evidence from West Stow, Suffolk (Crabtree 1989), although recent reviews draw on a number of other settlement assemblages of varying sizes (Sykes 2006, O'Connor 2011, Holmes 2014).

As with most sites following the advent of domestication in Britain, Anglo-Saxon assemblages are dominated by the remains of cattle, sheep and pig throughout the period (Sykes 2006, O'Connor 2011). West Stow has been interpreted as a largely self-sufficient settlement, with the domestic animals largely bred, raised, slaughtered and consumed at the site or in the local area (Crabtree 1989, Sykes 2006). In general, Early Saxon assemblages show little of the diversity or specialisation in animal husbandry noted from the Middle Saxon period onwards (see below). Cattle were sources of traction, milk, and manure while alive, and sheep may provide milk, wool and manure. Both provided meat, horn, bone and skin when slaughtered. Mortality profiles indicate a mixed strategy, with some management of stock early in life which may equate to slaughtering for milk production, some slaughtering of prime animals for meat, and some kept to adulthood for breeding, traction and wool.

Pigs, in contrast to cattle and sheep, are useful primarily for meat, and potentially also for rubbish disposal. They tend to be the third most common taxon identified on Saxon sites, although in terms of meat-weight, they may often have been the second most common taxon consumed (Albarella 2006). At West Stow, pigs appear to have been most common in the earliest phases of settlement (Crabtree 1989), potentially as a strategy used to establish stock at the village, as pigs are highly fertile and breed rapidly, which was then phased out in later periods. All three of the major taxa have differing requirements in terms of landscape – sheep and cattle require different types of pasture, pigs and sometimes cattle can be grazed in woodland, or pigs may be kept exclusively in sties in the settlement.

Other domestic taxa typically present on Early Saxon sites include horse, goat, dog, cat, domestic fowl and domestic goose. The proportion of goats on Early Saxon sites is difficult to calculate, owing to difficulties distinguishing their bones from sheep (Boessneck 1969; Zeder & Lapham 2010). However, at West Stow, where goats were positively identified, they were outnumbered by sheep remains in a ratio of approximately 100:1 (Crabtree 1989: 26). As with sheep, goats can be kept for meat and milk, although there is too little evidence to say much about husbandry patterns. Similarly little evidence is currently available about uses or husbandry of chickens and geese in the Early Saxon period. Bird remains usually comprise less than 10% of identified bones at medieval sites, and chicken remains tend to be most common, outnumbering those of geese (Serjeantson 2006). Both taxa provide eggs on a seasonal basis while alive, and geese may also have been useful as alarms, as they honk when approached (Crabtree 2012). Both taxa were also eaten, although they would have formed a minor part of the diet at best.

Horse bones are present in small numbers at most Anglo-Saxon sites (O'Connor 2011), comprising only 1.2% of domestic mammal bone at West Stow (Crabtree 1989). Evidence from butchered bones indicates that horse meat was consumed, albeit rarely, as part of the Early Saxon diet, with the practice not specifically prohibited on religious grounds until the eighth century (Simoons 1994; Poole 2013a). As the plough-horse was not introduced until the later medieval period (Sykes 2006), it is assumed that horses would largely have been used for transport. However, Crabtree (1989: 95) records several instances of spavin at West Stow, which may have resulted from the horses being used for heavy work such as ploughing or pulling carts.

Dogs are typically present on Anglo-Saxon sites in relatively small numbers, and are more frequently found as part of “special deposits” or Associated Bone Groups (ABGs), particularly in the Early Saxon period (Hamerow 2006; Morris & Jervis 2011), reflecting different treatment at death to the majority of animals whose bodies were processed and consumed. To take one example, two dog skeletons were recovered from a single sunken-featured building at West Stow. Neither were old animals – one aged at 7 months, and one at 15 months (Crabtree 1989). The 15 month old animal had a fractured and healed tibia (Crabtree 1989: 62), suggestive of a short and harsh life. Dogs are mentioned in the 10th century Aelfric’s Colloquy as used in hunting (chasing game with swift hounds) and herding (as guardians for the sheep by the shepherd) (Watkins 1977). In addition, bones from dogs of various different sizes were recovered from cremations at Spong Hill (Bond 1994), perhaps further indicating a variety of different roles and relationships for this taxon.

Cat remains are present in similar numbers on Anglo-Saxon sites, but to what extent these can be termed *domestic* animals is somewhat uncertain. It is likely that cats “self-domesticated”, becoming adapted to the human environment as providing a useful source of scavenged food, and populations of cats in medieval urban environments appear to be largely feral (Kitchener & O’Connor 2010). The attitude of Anglo-Saxon humans towards cats is somewhat ambiguous, not helped by the relative scarcity of evidence. Later Saxon evidence indicates that cats were used for their skins, but also valued for their ability as ratters and mousers (Kitchener & O’Connor 2010). Poole (2015a) has suggested a variety of attitudes may have existed towards cats in the later Anglo-Saxon period, dependant on both the person and the personality and attributes of the cat in question.

Wild mammals and birds are rare on Early Saxon sites (Sykes 2011). Red and roe deer are the most frequently identified wild mammals, although they are represented primarily by antler, which was collected for craft purposes and may have been collected when shed (MacGregor 1985). Some wild-fowling was carried out, with seventeen wild bird taxa identified from West Stow (Crabtree 1989). However, this is still relatively small-scale, with all of the taxa easily available in the area, and contributing a minor proportion of the meat diet. Fishing was also largely small-scale and local in the Early Saxon period. Few sites are recorded with more than a few fish bones recovered, and the two sites noted by Sykes (2011) as yielding substantial evidence of fishing (Bishopstone, Sussex; Bantham, Dorset) are both located within easy walking distance of the coast. However, the presence of an element of a marine flatfish at West Stow, approximately thirty miles from the nearest coast, suggests some element of travel or trade, however small-scale (Crabtree 1989).

Other wild mammals recorded at West Stow include hare, badger, fox and bear (Crabtree 1989), making the assemblage from West Stow one of the most diverse in terms of wild fauna recovered from the Early Saxon period (Sykes 2011). Hare, badger and fox are all local taxa, which may have been encountered in woodland or scrubland outside settlements (Poole 2015b), and all are fur-bearing species which may have been hunted for their pelts. By contrast, it is highly unlikely that most of the inhabitants of West Stow would ever have encountered a bear other than as a pelt. The population of bears in Britain in the Early Saxon period was vanishingly small, and confined to upland areas some distance from human settlement, and it is possible they were already extinct by this point (Hammon 2010). Unlike all the other taxa found at West Stow, which would have been encountered in the landscape on a regular basis, the bear pelt would have represented something unquestionably exotic, or a tangible connection with a distant homeland.

2.3.2.2 The Later Anglo-Saxon Period and the Christianisation of the Animalscape

As mentioned above, the practice of putting animals into graves more or less ceases in the 8^{th} century. The period from the 8^{th} to the 11^{th} centuries in Britain saw major social changes, which can be argued to represent the transition into the medieval period. The conversion to Christianity, development of monastic communities, the resurgence of urban settlement and development of *wics* and *burhs*, and increasing elite power and social stratification all affect the ways in which animal resources were managed and used. These changes indicate a world and worldview in fundamental transformation from the early Anglo-Saxon period, and are therefore worth considering in detail as part of the landscape in which the long-standing tradition of mortuary sacrifice of animals ended.

Rural sites in the Middle Anglo-Saxon period show an increasing level of specialisation in terms of livestock management compared to the Early Anglo-Saxon period. Cattle and sheep tend to be kept to older ages, indicating an increasing value for secondary products, primarily traction and wool (O'Connor 2011, Sykes 2006). There is no evidence for the development of specialist dairy farms until the later medieval period (Sykes 2006). A greater number of assemblages between the 7^{th} and 11^{th} centuries are dominated by cattle than are dominated by sheep, indicating the importance of agricultural intensification, linked to the development of towns and elite sites which require provisioning (see below), on the animal economy (Sykes 2006). Alongside these more general developments, the Middle Saxon period saw the development of "specialist" sites within the animal economy, such as Brandon, Suffolk, a specialist site for textile manufacture, and Wicken Bonhunt, Suffolk, which showed evidence for specialist production of pork (Crabtree 2012). There is debate over how and why this specialisation has been driven (summarised in Crabtree 2012). The development of monastic estates and monastic control over land has been argued (Blair 2005), as well as the impact of elite control. Crabtree (2012) argues for the influence of local decisions in particular circumstances, an explanation that does not preclude either the influence of monasteries or the elites, although the increased use of coinage in this period may have been a facilitating factor.

While the status of towns in post-Roman and Early Saxon Britain remains uncertain, it is clear that the 8th century saw an intensification or resumption of urban living, although the timing and nature of this differed substantially between different areas (Higham & Ryan 2013; Astill 2011). Urban areas appear initially to have had little direct impact on animal management strategies. Middle Saxon urban assemblages tend to be dominated by the remains of prime meat-age cattle, and less often sheep, indicating that towns were deliberately provisioned from rural areas (Holmes 2014: 100). By the 9th and 10th centuries, the diversity of meat available in towns appears to have been greater, with various traders such as fowlers and fishermen mentioned as selling their catches in town markets (Watkins 1977; Sykes 2006). Specialist butchers appear to have also been present in towns from the 10th century, with butchers' streets mentioned in historical records, and standardisation of meat cuts and the use of meat cleavers apparent from the zooarchaeological record (Sykes 2006). The diversity and quantity of fish tends to be higher in urban areas and on elite sites throughout the Middle and Later Anglo-Saxon period (Sykes 2011). The 10th century also saw particularly important changes in fish consumption, with access to deep-water fish and large-scale trade in cod and herring (Barrett et al. 2004, 2008).

From the 8th century, social stratification becomes more pronounced, and more apparent in the archaeological record, with the emergence of elite or high status sites such as Flixborough (Dobney et al 2007). Status distinctions also become apparent in terms of diet and relationship to animals (Sykes 2011). Taxonomic diversity tends to be higher in assemblages from higher-status sites, with more pork, game, fish and fowl, and less cattle and sheep present than in rural or urban assemblages (Sykes 2006). Hunting also increases in importance from the Middle Anglo-Saxon period. Post-cranial elements of deer, which are rare in Early Anglo-Saxon assemblages, become substantially more common in the Middle Anglo-Saxon period (Sykes 2011). The earliest clear evidence for falconry, used primarily to catch wildfowl, also dates from the Middle Anglo-Saxon period (Prummel 1997; Cherryson 2002; Serjeantson 2006). In the Middle Anglo-Saxon period, there was an ethic of redistribution from lords to retainers, with communal feasting as an important mechanism by which social bonds were maintained. However, Sykes (2011) has argued for increasing “privatisation” of wild resources by elites in the Late Anglo-Saxon period, with what a person is able to consume serving as a metaphor for the land which they control or are able to access. Elites are increasingly recorded as owning hunting parks and fisheries, and *Aelfric’s Colloquy* indicates that hunting, fishing and wildfowling were, in the Late Saxon period, considered as activities carried out by professionals employed by the elite (Watkins 1977; Sykes 2011). Elements of deer are found almost exclusively on high-status sites (Sykes 2011). Deer-hunting is likely to have required significant manpower, and so the consumption of deer was equally a demonstration of resource control in terms of people as in terms of land (Sykes 2011).

Changes in the Middle and Later Anglo-Saxon period, then, can be seen as resulting in an increasing dissociation of parts of the population, specifically townsfolk and arguably elites, from the animals which they ultimately consume. Townsfolk, in particular, became increasingly distanced from the lives of wild animals (excepting commensal urban fauna) (Sykes 2011). The earliest reference to bear-baiting derives from the pre-Conquest period, describing the obligation of the city of Norwich to “provide the king with a bear and six dogs for his amusement” (quoted in MacGregor 2012, 205), and dancing bears belonging to gleemen are also noted for the Anglo-Saxon period (Hammon 2010). The use of top wild predators for amusement is arguably symptomatic of increasing detachment from wild ecosystems. This resulted eventually in a later medieval culture where even wild resources could be considered owned, as seen in the custom of marking mute swans (swan-upping) on a seasonal basis in order to claim ownership (MacGregor 2012). With these developments in the way animals are used in the negotiation and demonstration of power, mortuary sacrifice of organic wealth arguably simply became irrelevant.

The detachment from wild ecosystems is less pronounced in rural areas, where agriculture still dominated daily activities throughout the period. However, specialisation and provisioning networks, such as food rent systems, as well as increasing restrictions on access to wild resources, may also have created substantial alterations in the perceived relationship between humans and animals. While everyday systems of production and consumption do not dictate perceptions of animals, the influence of economic and social change from the Early Saxon period is likely to have been appreciable.

2.3.3 An Anglo-Saxon Cosmology?

While the information from different sources can be combined to provide an overall perspective of the place of animals in early Anglo-Saxon life, the differences in emphasis between different sources are also instructive. The range of taxa represented in Anglo-Saxon cemeteries has long been noted to show significant differences to that recovered from settlement sites (Bond 1994, 1996; Bond & Worley 2006), and it has been noted above that both are substantially different from the taxa most often represented in Anglo-Saxon art (see also Pluskowski 2010). In considering which animals are most important in different areas of Anglo-Saxon life and thought, some idea of their value and symbolism can be attained.

Table 2.1 shows four taxonomic lists, drawn from literary evidence (Beowulf, after Prummel 2001), legal evidence (law codes in England to 10th century, reproduced in Attenborough 1922), settlement deposits (West Stow, Crabtree 1989), and cremation cemetery (Spong Hill, Bond 1994). The lists from the two historical sources are ordered in terms of number of mentions in the text. The list from West Stow is ordered by NISP, and that from Spong Hill is ordered by the number of cremations in which the animal occurs. The frequencies are therefore not directly quantitatively comparable, and therefore only the qualitative rankings have been displayed in the table. The sources are chosen as emblematic of different areas of Anglo-Saxon life, rather than directly representative. All of these sources clearly provide a different perspective on human-animal relationships in the Anglo-Saxon period: the Law Codes largely reflect and rank animals as items of wealth and economic utility; West Stow reflects them primarily in terms of everyday utility; Beowulf describes animals of the imagination; and Spong Hill and mortuary practice is arguably a blend of all three – imagination, wealth, and utility.

Some of the potential and shortcomings of these sources has already been discussed above (Section 2.3.1). However, it is worth reiterating that while the assemblages from Spong Hill and West Stow are broadly contemporary, the documentary sources are of a later date. The dating of the composition of Beowulf is famously difficult, with the poem recorded in a manuscript of the late 10th / 11th century, but which may have been composed any time from before the later 9th century to the date it was first written down (Higham & Ryan 2013: 384-5); and which may or may not reflect earlier pagan attitudes to animals. The law codes range in date throughout the later Anglo-Saxon period, from the late 6th / 7th century to the end of the 10th century (Attenborough 1922), and may therefore reflect a range of attitudes from across this period.

Several points are apparent from tabulating the evidence in this way. Firstly, horses – including reference to horsemen and horse-related activities, as well as actual horses – are among the most common taxa in the literary sources, and also in the cremation cemetery at Spong Hill, but are substantially less common than the major “herd” animals at West Stow – cattle, sheep and pig. Horses have a different biography to other domesticates, which involves close association with humans through training and riding. Horses appear to have been eaten in the early Saxon period, but there is no evidence that they were ever kept or bred exclusively for meat (Poole 2013a). Practically speaking, the longer life history and the uses to which they were put mean that there are likely to be fewer horses than cattle or sheep kept by a settlement, that the depositional pathways at the end of life are likely to have been different to more regularly consumed animals, and that both their imaginative and practical value would have been high. The specific cosmological value horses may have held in the Anglo-Saxon imagination has been discussed above (Section 2.1.3; see also Chapter 5.2, Fern 2010, 2011)

Beowulf	Law Codes	West Stow	Spong Hill
Horse	Cattle	Sheep	Horse
Wild boar	Horse	Cattle	Sheep
Wolf	Sheep	Pig	Pig
Deer	Pig	Horse	Cattle
Raven	Dog	Dog	Dog
Dog		Chicken	Bear
Gannet		Goose	Fox
Eagle		Cat	Red deer
Hawk		*Wild birds*	Chicken
		Red deer	Roe deer
		Fish	*Raptor*
		Roe deer	Beaver
		Hare	Hare
		Badger	*Fish*
		Bear	Goose
		Fox	

Table 2.1: Frequencies of taxa from Anglo-Saxon sources. Italicised entries in the Beowulf list indicate that the animal is mentioned only as an image or comparison, rather than a real, active animal; italicised entries in the West Stow and Spong Hill lists indicate that the taxon is grouped to a higher level than species for ease of comparison.

The opposite situation can be argued for sheep. Sheep are mentioned more rarely than cattle in the law codes and never in Beowulf, but are one of the most common taxa found in archaeological assemblages, and are more common than cattle both at West Stow (in numbers, if not in meat weight) and at Spong Hill. A number of reasons can be suggested for this, in particular the fact that cattle are both larger and more valuable, and therefore both more problematic and more desirable. The greater numbers of sheep than cattle at Spong Hill therefore follows settlement patterns for this area, indicating that in circumstances both mortuary and non-mortuary it was more common for the smaller sheep to be killed. The slaughter of cattle may have been a more unusual and dramatic event, creating a larger surplus of meat to be disposed of, a task which was often accomplished through feasting or other means of distribution throughout the wider community (Robb 2007, McCormick 2002).

Finally, the list of taxa mentioned in Beowulf differs very markedly from the species present in other sources. This is at least partially because the poem is not set in England, but primarily because the only owned animals referenced in the text are horses and dogs. On the other hand, the majority of taxa mentioned in Beowulf are wild taxa. Of the seven taxa, three are predatory – wolf, eagle and hawk. Wild taxa are uncommon in archaeological assemblages, and predatory animals are particularly rare or entirely absent, with only bear and fox recorded at West Stow, and among the least common taxa found at the site. Interestingly, bear and fox are the most common of the wild taxa identified at Spong Hill (identified in six and probably five instances, respectively), perhaps indicating a referencing of mythology in the burials. As noted above, bears would not have been encountered in the Anglo-Saxon landscape, and the absence of any direct contact for the majority of people may have invested the imported pelts with a greater significance. It is worth noting, in addition, that real animals are relatively rare in Beowulf, and are far outweighed by "imaginary" creatures – monsters and dragons (Prummel 2001: 82). The animals which figured largest in the Anglo-Saxon imagination were typically those not encountered on an everyday basis.

2.4 Summary

To summarise, the above review of what is known about the use of animals in Anglo-Saxon burial has shown strong trajectories and history of research along certain lines, and some significant gaps in other areas. The evidence for cremation burials is heavily based on Spong Hill, owing to the size of the site and its extensive history of publication. Inhumation evidence is apparently sparse, but has never been fully summarised. For both rites, there is a lack of systematic consideration of variation between different cemeteries and regions.

Theoretically, a pre-1980s under-emphasis on the eschatological and pagan belief aspects of mortuary practices has now been addressed by a number of different researchers (e.g. Williams 2001; authors in Carver et al. 2010).

However, recent theorists working on both Scandinavian and English mortuary practices have emphasised the importance of looking at the process by which burials are created, and also the wider (everyday) cosmology out of which mortuary practices are drawn (Jennbert 2006; 2011). A variety of sources are available for reconstructing the place of animals in Anglo-Saxon cosmology, and, combined, they emphasise the point that different types of animals are valued and valuable in different contexts and areas of life. From the 8th century onwards, the re-establishment of Christianity as a dominant faith marked the end of furnished burial, and concurrent economic and social changes also affected how people managed and related to animals on a daily basis. These developments, as much as the change in religion, mark the 5th-7th century out as a defined period in terms of human-animal relations.

A number of outstanding questions remain regarding the role of animals in 5th-7th century England, including the degree and nature of variation in mortuary practices involving animals, and the influence of social processes and cosmology in the creation of the grave, and it is towards these questions that this research is directed. In particular, it is clear that the majority of research in this area has been focused either around specific practices (e.g. the inclusion of horses (Fern 2005, 2007, 2010)) or specific sites (e.g. Spong Hill; Sancton (Bond & Worley 2006)), with a distinct lack of regional studies. The recent survey of Midlands cremation cemeteries by McCullough-French (2017) has highlighted some of the problems which may be encountered when attempting to study cemeteries systematically across a region, particularly in terms of the quality and quantity of available data. The quality of data available from Anglo-Saxon cemeteries across eastern England is perhaps one of the most important unknowns, and this is discussed in the next chapter.

Chapter 3: Data Quality and Validity

3.1 Constructing a Dataset

As set out in the introduction to this thesis, the aim is to define the role of animals in mortuary practices across the full variety of cemeteries between the 5th-7th centuries AD, using Eastern England as a case study area. This involves the collection of as comprehensive a dataset as possible from across the five historic counties of Norfolk, Suffolk, Essex, Lincolnshire and Cambridgeshire. As highlighted in Chapter 2, there has not been a similarly comprehensive regional survey conducted which includes both inhumation and cremation rites, with much of current understanding based around a few key sites. For a wide-ranging survey such as this, where information is drawn from multiple different sources, it is essential that data quality control is rigorous to ensure that taphonomic consequences are not mistaken for Anglo-Saxon attitudes. The first task, then, is to consider different aspects of data validity and how these might influence data collection and analysis.

Any survey of early Anglo-Saxon burial practices has to deal with a complex and disparate dataset. The earliest recorded excavations of Anglo-Saxon burials date from the 17th and 18th centuries (Lucy 2000). As recording and storage methods only coalesced around a consensus best practice well into the second half of the twentieth century, there is a long tradition of non-standard excavation and recording methods and curation policies to be dealt with. Recent research has demonstrated that many more recorded cremation cemeteries have been excavated prior to 1950 than have been excavated post-1950 (McCullough-French 2017), confirming this to be a substantial issue. Secondly, cremation and inhumation rites are different processes with different taphonomic histories to the assemblages, and different aspects of taphonomy affecting interpretation. To compile a dataset where many burials from many cemeteries, both cremation and inhumation, are made comparable, it is necessary to engage with these problems to ensure that we are making valid comparisons.

Establishing the validity of the data – the level of confidence with which it can be said that the data collected represents Anglo-Saxon mortuary ritual – breaks down into three areas. Firstly, a summary is given using data from the Norfolk HER to discuss the history and development of excavations of cremation and inhumations sites, in order to indicate the types of secondary, and indeed primary, data which are available to the study. Secondly, the question of how much of the animal bone found within inhumation cemeteries is contemporary and indicative of mortuary practice is still one with little overall consensus. The establishment of robust criteria for which deposits to include and which to exclude is critical to ensuring both validity and comparability with datasets in the future, but the question of how these criteria themselves then influence the dataset which can be built needs also to be addressed. Thirdly, within cremation cemeteries, the effects of truncation (leading to loss of cremated bone) and of inter-observer variation – particularly between older and more modern analyses – need to be considered in order to understand the extent to which data from different cemeteries can successfully be compared.

3.2 Data Quality: A Norfolk Case Study

A search of the online Norfolk Historic Environment Record conducted in 2014 yielded records of almost 200 cemetery sites or burials dated to the early Anglo-Saxon period (5^{th}-7^{th} centuries AD) (http://www.heritage.norfolk.gov.uk/simple-search, accessed November 2014; see also Chester-Kadwell 2009). However, only twelve sites from Norfolk were eventually considered admissible in the dataset. This indicates that, on average, only 1 in every 15-16 cemeteries provides useable data for mortuary practices relating to animals; and therefore that the vast majority of known Anglo-Saxon cemetery sites provide neither useable secondary data for this type of osteologically-based study, nor exist in a state where they can be reassessed to bring them to this level. Since the basic requirements in terms of information for this thesis are the existence of contextual information and the existence of the primary archive, this is a sobering realisation.

In many recent cases, cemetery sites are now identified from concentrations of metal-detector finds without excavation. At least 96 of the early Anglo-Saxon cemetery sites identified in the initial search were unexcavated, and recorded only from metal-detected finds (see also Chester-Kadwell 2009). This suggests that around half the dataset of known sites in the NHER will not have produced any animal bone, due simply to their method of recovery, and therefore in some ways this initial headline figure is misleading. However, there is a strongly-established tradition of metal detecting in Norfolk, and the problem of unexcavated sites may not play such a significant role in other counties.

A second problem is that of isolated burials. Almost a third of the excavated cemetery sites (34 records) were known from only one recorded burial or partial burial. These ranged from chance finds of urns or inhumations in gravel quarries, such as at Foulden (NHER 4801) and Stow Bridge (NHER 2414); to isolated burials found on multi-period sites as part of commercial pre-construct evaluations, such as at Kilverstone (NHER 12167) and at Bury Road, Thetford (NHER 35808). While these represent a large number of *sites*, they also by definition represent a small number of actual burials. Considering the prevalence rates for animal bone from known sites, of the eight examples of single cremations, fewer than four would be expected to yield animal bone (based on Spong Hill – 46% prevalence); and of the twenty-six inhumations, at most one burial might have contained animal bone (based on Great Chesterford, Essex – 5% prevalence). In addition to the limited amount of data expected from small sites, it is often hard to define what these burials represent, as there is often insufficient information from an excavation not directly focused on finding Anglo-Saxon burials to tell whether these are outliers of a larger cemetery, or whether they are genuinely isolated burials. In the final dataset, any site with fewer than five burials was excluded in order to circumvent these problems.

Even with unexcavated sites and isolated burials excluded, the majority of known cemetery sites from Norfolk could not be used within the dataset. In general, the problems lie within excavation and curation history. These are different for inhumation and cremation cemeteries, and the issues are therefore presented separately, below.

3.2.1 Cremation

A total of 47 early Anglo-Saxon cremation cemetery sites were identified in the NHER survey, of which 29 were excavated before 1960, and 24 were excavated in the 19th century or earlier and not revisited since. During this period, no systematic policy of excavation, collection or curation existed, and therefore the location and condition of these archives is highly variable. The majority of these early cemetery sites are not fully excavated and are known from a few chance finds. To take one example, seven urns were excavated from Brundall Gardens in Brundall, Norfolk between 1880 and 1900, but little more is known of the site (NHER 10234).

The most substantial problem regarding cremation archives is that of unsympathetic discard policies. In 1930, an eminent Swedish anthropologist recommended to the Chief Inspector of Antiquities in Stockholm: "…my considered opinion, based on experience, [is] that cremated remains of human bones in burial urns are almost always devoid of any anthropological interest… [T]hese bones are of no scientific value, and I consider that nothing is lost if they are neither submitted to nor preserved in the Museum." (Furst 1930, quoted in Gejvall 1969: 468). This neatly summarises the prevailing opinion in Britain of cremated bone, and unfortunately its typical fate, until the pioneering analyses of both Scandinavian and British osteologists, such as Nils-Gustaf Gejvall, Calvin Wells and Keith Manchester, in the 1950s and 1960s. While the decision was taken in Sweden to retain cremated bone from excavations against future developments (Gejvall 1969), in Britain the typical situation was that only urns and obvious grave goods – both of which could be used for dating or within artefact typologies – were retained, and the cremated bone itself was discarded (Lucy 2000: 104). Castle Acre (Norfolk) and Lackford (Suffolk) are typical examples of large cemetery sites which have suffered complete discard of the cremated bone. Castle Acre was first discovered in 1857, and between 1857 and 1891, around 70-80 urns were excavated (Housman 1895). Many of these, and the attendant grave goods, were given to Norwich Castle Museum, where they are still in storage. However, the urns were at some point emptied, and nothing of their contents survives. A similar situation was recorded at Lackford, in Suffolk. Excavated from 1947-1951, primarily by Lethbridge, the cemetery yielded approximately 390 cremations and multiple small finds (Lethbridge 1951, Suffolk Historic Environment Record). Falling on the southern edge of the Core Cremation Zone defined by Hills & Lucy (2013), Lackford remains the only large cremation cemetery excavated in Suffolk, and would therefore have served as an important point of comparison to the Norfolk and Lincolnshire sites. Again, none of the cremated bone remains.

The non-retention of cremated bone is a problem which has long been known and is often mentioned in the context of Anglo-Saxon cemeteries (e.g. Leahy 2007; Filmer-Sankey & Pestell 2001). However, it is only recently that the scale of the problem this has caused has become apparent. Prior to 1960, twenty-nine cremation cemetery sites were excavated in Norfolk, of which four (Castle Acre, Caistor-by-Norwich, Brettenham and Illington) contained over 100 cremations each. Of these, only Illington has survived intact, due to its luck in being one of the earliest cemeteries from which cremated bone was analysed by Calvin Wells (Davison et al 1993). Since 1960, only one cremation cemetery has been excavated in Norfolk which comprised over 100 cremations, and this is Spong Hill.

While discard of cremated bone was typical from cemeteries excavated prior to 1960, as noted above, no standardised protocols were in place and not all cemeteries were subject to complete discard. Brundall Gardens, mentioned above, had cremated bone survive from two of the urns archived in Norwich Castle Museum. From the processing of this material, it appears likely that the urns had retained their contents when accessioned and were micro-excavated at a later point, although at present no records have been found to confirm this. The cemetery of Caistor-by-Norwich was subject to an even more sporadic retention policy in terms of the cremated bone. Located to the south-east of the Roman town of Venta Icenorum and south of present-day Norwich, the cemetery was excavated between 1932 and 1937 under the direction of F.R. Mann. Over 370 cremations were excavated, along with 39 inhumations. As a rule, cremated bone and un-cremated animal bone from the site was not retained (Myres & Green 1973). However, Mann was interested in both child cremations and animal bone within cremations, and retained some "examples" as evidence of these practices. For the child cremations, this was predominantly milk teeth, while from animals mostly recognisable elements were retained, including scapulae, astragali and teeth (see Appendix 6). Mann also notes, "In Nov. 1936 I noticed for the first time an animal bone in one of the urns among the human burnt bones… Since my attention was called to the matter by the finding of this bone, I have carefully looked for animal bones… and frequently found them" (quoted in Myres & Green 1973, 119). Mann's comments and the retained examples make it clear that animal bone was initially present in the Caistor-by-Norwich cremations. However, the discard of all the rest of the cremated material means that what remains is out of context and of minimal use. It was analysed by Calvin Wells, who described the material as "almost worthless" (Wells 1973a, 120).

Only 15 cemeteries in Norfolk with cremations have been excavated between 1960 and the present, about half the number excavated prior to this date. Most of these cemeteries are inhumation cemeteries with a few cremations, such as Morningthorpe (Green et al 1987), and only two of the listed sites are predominantly cremation and contain more than 10 burials. The largest of these is Spong Hill, which has dominated discussion of cremation practice in Norfolk and, arguably, in all of England. The other site is Field Dalling, which was subject to rescue excavations in the 1970s and has never been fully written up (see Section 4.2.1). Where records were accessible, either via publication or as grey literature, data from all these sites was included in the database. Accessibility of grey literature has improved markedly since the establishment of the Archaeology Data Service

(ADS), with reports from the year 2000 onwards commonly available through ADS databases. However, for earlier unpublished sites, information is still difficult or impossible to access. To take one example, cremations excavated in 1986 from East Walton (NHER 1060) were never reported, and any information which exists on this site is accessible only through the Norfolk Historic Environment Record.

3.2.2 Inhumation

The difficulties with early Anglo-Saxon inhumation cemeteries in Norfolk are different to those for cremation cemeteries, although the problems of inconsistent excavation and curation still pertain. 57 excavated cemeteries with inhumations are recorded in the NHER, of which 32 were excavated prior to 1960 and 25 post-1960. This is a more balanced ratio than that for cremation cemeteries. As with the cremations, non-systematic curation is a substantial difficulty. At Caistor-by-Norwich, an estimated 60 skeletons were found in 39 graves (Myres & Green 1973). However, the assessment by Calvin Wells only discussed 10 collections of bone, four of which could not be attributed to grave (Wells 1973b), a situation which can probably be attributed to poor curation policy by the excavator. While the rest of the Caistor-by-Norwich archive is held by Norwich Castle Museum, these inhumation remains were not part of it. Uncremated animal bone is mentioned by F.R. Mann in reports in association with graves and cremations, but this appears never to have been systematically analysed and again is not part of the present archive.

Similarly, if several chance finds have been made at a site, only part of the archive may still exist. The site of Foulden (NHER 4801) is probably best known for a human burial with the skeleton of a dog resting across his knees (Lucy 2000; Prummel 1992). The site is described as a sand and gravel pit, and finds of human burials were made on multiple occasions from 1930 onwards. The human-dog co-burial was found in 1931, but it is not part of the archive held by Norwich Castle Museum which holds only skeletons found after 1954, and no information exists to suggest where this might be held or whether it has been retained.

A second problem with archive inhumation sites relates to the context of animal remains. In cremation burials, the context from which any unrecognised animal remains came is preserved, in that they usually are to be found in the general collection of cremated bone from that urn. For inhumation sites, particularly those not recorded using the now-standard single context recording methodology, unless animal bone is recognised and recorded as a deposit during the excavation it is difficult to reconstruct its provenance, which is critical for these deposits. The site of Mundford (NHER 5112) is considered an Anglo-Saxon cemetery on the basis of several chance finds of inhumations recovered between 1951 and 1956. The site was minimally reported, and the material archive is stored by Norwich Castle Museum. Reassessment showed that, included within the human skeletal remains, there are several fragments of cattle bone associated with three of the skeletons, including cranial bone and one calcaneus, and a single fragment of large mammal rib which had been chopped through obliquely on both ends. One echinoid fossil was also present with a skeleton labelled "Inh VI". It is likely that the fossil was a genuine inclusion with the burial, as the chances of random occurrence are low and other examples are known of this practice (Meaney 1981). However, the lack of proper recording and the known prevalence of residual animal bone at other cemeteries make it difficult to tell how genuine the animal bone deposits are. Since none are Associated Bone Groups and due to the lack of other contextual information, the decision was taken not to admit these in the study. Further discussion of this problem can be found below (Section 3.3).

Reassessment of primary material where initial recording has been poor can therefore be problematic. However, when recording from inhumation cemetery sites is reasonable, the information can sometimes prove valuable even if the material archive is no longer in existence, regardless of the date on which it was recorded. Three barrows were excavated at Sporle-with-Palgrave in 1813 in advance of their removal for agricultural purposes (Ashley & Penn 2012). The site is thought to be a prehistoric barrow cemetery which was later reused in the Anglo-Saxon period. One barrow contained six or seven early Saxon inhumations, and a second was recorded as “containing the bones of horses”. While the record is sparing in terms of detail, it is important in that it records a practice which is unique in the Anglo-Saxon burial record (i.e. the burial of horse(s) unassociated with a human burial within a barrow). There is little reason to doubt its general accuracy (Ashley & Penn 2012), although the questions which cannot be answered about this site (date, contemporaneity of the two barrows, how many horses, whether there was a poorly preserved human also under the horse barrow, etc.) remain significant ones in determining how the deposit was constructed and whether it is as unique as it appears.

Despite poor curation problems, the most significant single factor which limits evidence of animal bone in inhumation cemeteries is the typically-poor bone preservation within Norfolk and across East Anglia. Five early Anglo-Saxon cemetery sites in Norfolk which are well-published and excavated since 1960 (and therefore included in the dataset) have more than twenty inhumation burials. For all of these sites, preservation conditions were recorded as poor. The cemeteries in question are predominantly located on sandy soils, which are free-draining and mildly acidic, both of which conditions are inimical to bone preservation.

Image removed for copyright reasons.

Figure 3.1: Preservation of human remains at Morningthorpe. From Green et al. (1987).

Most significantly, this includes the early Anglo-Saxon inhumation cemetery of Morningthorpe (Green et al 1987), which at 365 burials is the largest well-published inhumation cemetery in Norfolk. Minimal human bone survives from this site, and the only animal bone which survives is either cremated or tooth fragments, which are associated with a handful of graves (Figure 3.1). In most of these cases, it is impossible to tell whether the teeth or cremated bone are deliberate deposits or incidental inclusions. Cremated bone in the fill of inhumation grave 250, which also included potsherds and human cremated bone, is likely to be from a disturbed cremation burial. However, burnt animal bone in the ring ditch around inhumation grave 38 is more ambiguous. The inhumation cemeteries where preservation conditions have been sufficiently good for bone to survive – Oxborough, Brunel Way, Swaffham Paddocks and Thornham – each have relatively few inhumations, and no unequivocal animal inclusions.

3.2.3 Summary

While Norfolk has been used as a case study, the problems and biases in the dataset outlined above are by no means exclusive to Norfolk as a county. Poor bone preservation, particularly in early Anglo-Saxon cemeteries, is common across East Anglia – Springfield Lyons (Suffolk), Mucking (Essex) and Sheffields Hill (Lincolnshire) can all also be highlighted as substantial inhumation cemeteries from which almost no bone survives. The problem of discard from cremation cemeteries is widely-spread and substantial – other examples from eastern England include Lackford (Suffolk), which has been mentioned above, and earlier interventions at Snape (Suffolk). McCullough-French has demonstrated that this problem extends across the country, suggesting that it is particularly profound in the Midlands, where the majority of cremations from mixed-rite cemeteries were excavated prior to 1950 (2017: 136).

Inhumation cemeteries, similarly, are also not exempt from egregiously arbitrary retention policies, with a full range of strategies from good to downright peculiar recorded across East Anglia. The most striking of these is that adopted by G. Taylor in the 1960s excavations at Welbeck Hill (Lincolnshire), where from each of eight burials he “retain(ed) the mandible and cranium; other skeletal remains were re-interred in their own graves at a lower level to avoid possible future damage by farming.” (North-East Lincolnshire HER, record 0512/1/0). It appears likely that the reason that understanding of early Anglo-Saxon mortuary activity involving animals rests on a few sites is not simply because they are the most well-known and well-publicised, but because they are the most reliable and richest sources of information in a highly problematic data-set. Good analysis of animal bone from large, well-excavated cremation cemeteries such as Cleatham, Lincolnshire and Elsham Wolds, Lincolnshire (see Chapter 4), and reliable reporting of animal bone inclusions from recent inhumation cemetery excavations are therefore surprisingly critical for the development of knowledge of these practices.

3.3 Inhumation Cemeteries

3.3.1 On Determining Intentionality of Deposits

The problem of how to determine if animal bone found with an inhumation is an intentional deposit remains a vexed question, with no methodological consensus as to how a deposit should be defined. Animal bone is regularly present within the fills of graves as well as in association with the human skeletal material, both in later Saxon cemeteries (e.g. Brandon, Suffolk (Crabtree & Campana 2014)) and in cemeteries from the earlier period (e.g. Great Chesterford, Cambridgeshire; Castledyke South, Lincolnshire). Animal bone from grave fills is regularly included within inhumation catalogues, and has been treated as part of the grave assemblage in some analyses. Lee (2007), using Castledyke South and Butlers' Field, Gloucestershire (Boyle et al. 1998) as examples, includes the animal bone from grave fills in her arguments for mortuary feasting at these sites. Similarly, Meaney (1981) in her survey of bone amulets includes examples from grave backfills as part of the grave assemblage. That animal bone deposits could be placed higher in the grave backfill than the human body is attested by one example from Grave 2339, Ipswich Buttermarket, Suffolk, where an organic stain interpreted as representing at least part of an animal carcass was placed on top of a chamber grave (Scull 2009, 145). However, there are no similar examples of Associated Bone Groups placed within grave backfills recorded in the dataset – these seem instead to be confined to the grave tableaux. Instead, bones from grave backfills are predominantly disarticulated refuse, of a similar character to that found on settlement sites. For most sites, disarticulated animal bone within backfills has been interpreted as residual, and there are evident sources for the material. At Sedgeford, an 8th-9th century cemetery in Norfolk with a substantial amount of material recovered from within grave fills, the animal bone from the cemetery is considered to represent refuse from the contemporary settlement higher up the slope (Rossins pers. comm. May 2015). At Great Chesterford, the cemetery lies to the north-west of the Roman town of the same name, and was noted to directly overlie many Roman pit features, from which much of the animal bone is thought to derive (Evison 1994; Serjeantson 1994). However, in both cases, the provenance of this material has been assumed, rather than directly tested.

Similarly, there are examples where material from within the grave tableaux is of uncertain provenance. One fragment of vertebra recorded from Grave 19, Swaffham Paddocks, Norfolk, from beside the left arm of a male burial, is plausible both as intrusive and as a deliberate deposit. Similar can be said for unidentified fragments of bone recorded from within pots at Caistor-by-Norwich and a cow mandible and other fragments recovered from within a glass bowl at Great Chesterford. Regularly problematic are single, unworked teeth from domestic animals. The use of perforated teeth of pigs and canids as worn amulets, and their inclusion in graves, has led to a certain amount of suspicion that unworked teeth may similarly be acting as amulets within graves, and this has been suggested for both earlier and later Anglo-Saxon periods (e.g. Gilchrist 2008, Geake 1997, Meaney 1981). However, single animal teeth are relatively easy to transport and their small size means they can work down-profile readily. Similarly, tooth enamel does not show weathering or mechanical degradation associated with transport in the same manner as bones, making it difficult to read their taphonomic history. However, Grave 60 from the Dover Buckland cemetery in Kent is notable as it contains a single cattle premolar within a wooden “amulet box”, containing spindle whorls, a key and a bead (Evison 1987; Sladen 2016). The tooth is described as “weathered”, suggesting a history either of deliberate curation or of exposure on the ground surface. The example from Dover Buckland is about as unambiguous an inclusion of a domestic animal tooth as an amulet as possible, and demonstrates that on occasion, some domestic animal teeth could be considered special and curated. However, in all cases, their purported inclusion with burials should be treated very cautiously.

Establishing a methodology to ascertain the provenance of animal bone is critical. Inadvertently incorporating bone of uncertain provenance has the potential to cloud or skew results, particularly where not a great deal of data exists. However, any exclusion of bone must be done with just cause. The following criteria have therefore been applied to define material which is suitable for inclusion in the dataset:

1. The bone is part of an Associated Bone Group

OR

2. The bone is curated / worked.

OR

3. The bone is incontrovertibly associated with the grave assemblage.

AND

4. The deposit has a clear location, either as part of the grave assemblage, a discrete lens within the fill, or within a separate feature.

Associated Bone Groups are generally taken as evidence that a deposit is primary and minimally disturbed since burial, as they are buried fleshed and in articulation and any disturbance would serve to disrupt the articulation and scatter the bone group. However, some caution is required. In the author's own experience, digging in the back garden to recover a buried roe deer skeleton also yielded the partial remains of a duck. These were not in articulation, but were all recovered from a similar location within the pit. On the bench, these would certainly be classed as an Associated Bone Group. However, the history of the deposit is in this case known, and these were not a primary deposit within the pit, but are instead assumed to be a secondary deposit, whereby half a skeletonised duck was disturbed in digging the pit, and reburied quickly in a discrete shovelful. A similar process of disturbance and reburial can be seen at Melbourn, Cambridgeshire (Duncan et al. 2003), where a partial sheep ABG was present in the backfill of a seventh century grave, along with human remains. The interpretation of the excavator is that this represents the disturbed remains of an earlier grave which the 7th century grave has cut. Similarly, at Castledyke South, Grave 36 contained a discrete deposit of dog ribs below the left foot of an adult male skeleton, which are interpreted on grounds of condition as disturbed from an earlier burial (Nicholson 1998).

Deposits considered as “incontrovertibly” associated with a grave assemblage include single bones which are neither curated nor worked, but are nevertheless clearly deliberate inclusions. One example of this is a single pig tibia, included within a deposit of sheep remains in grave 4 at Castledyke South (Nicholson 1998), where its position with the sheep remains to the left of the human skull makes it likely that this was a deliberate deposit. However, in practice few single elements can be counted as “incontrovertible” deposits, since the probability of residuality or intrusion is mostly difficult to discount, or is a simpler explanation for the presence of the bone.

Location is a critical factor in all of these deposits. The “grave tableau” or display is considered to have been of substantial importance in Anglo-Saxon inhumation (Williams 2011; see also Chapter 2). The placing of animal deposits in graves can be seen to reflect this careful arrangement of material, with small dogs, for instance, placed on or across the body and larger dogs placed towards the feet or knees of the person (see Section 5.4). The deposit from the fill of the chamber grave at Ipswich Buttermarket (discussed above) had clearly been placed originally at the top of the chamber, suggesting that even deposits included at a later stage were subject to some considerations of appropriate placing. Material was excluded from the dataset where information on the location of a deposit within the grave was not available, in particular whether the deposit was in the grave or in the backfill. Single bones from backfills were also excluded as a rule.

In total, this gives 54 deposits which fulfil these criteria and which comprise the dataset across Eastern England. A further 54 deposits were considered to partially fulfil the criteria, or to fulfil the criteria but to be sufficiently at odds with the rest of the dataset to give cause for concern. One example of this is grave 2325 from Kirkby La Thorpe, of an adult female, which is described as having several “probably contemporary” horse vertebrae placed parallel to the back of the human. In this circumstance, the deposit is treated with caution as this is the only example of a horse being placed in a grave as a section of the post-cranial skeleton; and other material from the Kirkby la Thorpe cemetery is considered as firmly residual. A comparison of the "certain" versus "uncertain" deposits shows that cattle elements are more likely to be classed as "uncertain" (Table 3.1). This could represent a systematic bias to the dataset, since cattle are larger animals than sheep, and therefore equivalent portions of meat may be represented by a single bone of cattle and several bones of sheep. For instance, a cattle femur from grave 8 at Castledyke South was considered an uncertain deposit partly since it was a single bone, although its position between the legs of the human is also atypical. Dogs are also more frequent in the "uncertain" dataset than in the "certain" dataset, which in this case is due in part to the problem of dogs buried as individual animals in pits within the cemetery for which there is no other dating evidence – for instance, at Minerva in Cambridgeshire, where the location of the undated pit containing the dog means this could plausibly be associated with the cemetery, the Anglo-Saxon field system, or pre-existing Iron Age and Roman deposits (Gibson 2007). Unidentified bone is also only included in the "certain" dataset in exceptional circumstances.

Taxon	Certain	Uncertain
sheep	13	11
horse	10	4
cattle	2	10
pig	4	4
chicken	6	1
duck	1	
goose	2	2
dog	2	5
fish		1
pig / beaver	1	
medium mammal	5	1
large mammal		2
unidentified	3	9

Table 3.1: Comparison of "certain" and "uncertain" deposits from inhumation graves. Numbers indicate frequency of discrete deposits of animal bone within graves.

In most circumstances, only the deposits from the "certain" dataset were considered of sufficient quality and integrity to be discussed and, particularly, quantified. It is acknowledged that this has limited the amount of bone available to discuss from inhumations, although even with the “uncertain” dataset included the numbers would remain very low compared to cremation deposits. However, the importance of working with a dataset of the best possible integrity was considered the highest priority. A full list of both the “certain” and “uncertain” deposits is provided in Appendix 7.

3.3.2 Mortuary Feasting and Disarticulated Bone

Figure 3.2: Location of case study sites in Section 3.3.2.

The above methodology is suggested for identifying inclusions within the grave assemblage, which were placed intentionally to accompany the dead. However, it is possible that not all inadvertent inclusions are devoid of information regarding mortuary processes. A number of factors indicate mortuary feasting was occurring in cemetery contexts, including suggested cooking pits at some cemeteries and the portions of animals placed within the grave (see Section 5.3 for further discussion). As discussed above, many cemeteries also yield substantial quantities of animal bone from grave backfills or as otherwise unintended inclusions. This is most often interpreted as residual, although it has been suggested in some cases that it may represent debris from mortuary feasting (Lee 2007: 67). The purpose of the following section is to develop a methodology to test these interpretations, based on an assessment of the taphonomy and composition of deposits from three case study sites: Caister-by-Yarmouth (Norfolk), Thornham (Norfolk), and Bloodmoor Hill (Suffolk) (Figure 3.2). Assemblages from Caister-by-Yarmouth and Thornham are held by Norfolk Museums Service and targeted primary assessment was carried out in order to ascertain the taphonomic condition and therefore potential source of material within grave fills. Caister-by-Yarmouth is a mid-late Anglo-Saxon cemetery on the site of a Roman fort, and Thornham, is a 7th century Anglo-Saxon cemetery, also on the site of a Roman fort. Both sites were selected primarily on the basis of the quality and accessibility of their archives as well as the presence of an obvious possible source of residual material in the Roman forts they overlie, making these a useful methodological testing ground, even though the dating of the Caister-by-Yarmouth cemetery means this falls outside the main date range of the study. Bloodmoor Hill is a “Final Phase” inhumation cemetery and therefore comparable to Thornham. Only secondary data was available from this site, but this was presented in such a way in the original report (Higbee 2009) that it can be incorporated readily within this discussion.

3.3.2.1 Methods

In order to identify animal bone as the result of unique contemporary activity on the cemetery site, two criteria are applied:

1. The assemblage should be *distinct* in composition from any potential sources of residual bone, for example with different proportions of major taxa than the source assemblage.
2. The taphonomic condition of the assemblage should be distinct from or better than any potential sources of residual bone.

The recording protocol was therefore designed to focus on the collection of taphonomic information. Bone was recorded in a two stage process – by individual identified specimen, and by context. Information collected is detailed below. Material from each context was also photographed for inclusion in the site archive. While it represents a broad brush approach, a similar methodology has previously been shown to be effective in identifying varying levels of taphonomic disturbance at urban sites (Rainsford et al. 2016).

For each context, the following information was recorded:

- Overall number of bones in the context
- Number of identified specimens (NISP)
- Quantity of unidentified fragments. A fragment was counted as unidentified if it could not be identified to taxon or to size class (large / medium / small mammal; bird or fish).
- Overall condition of assemblage. This is a visual assessment primarily based on surface condition, which acts an assessment of biostratinomic and diagenetic degradation. Contexts are classed within the following four categories:
    - Good (i.e. most bones with minimal degradation and fresh surfaces)
    - Reasonable (i.e. some degradation, marked by minimal surface cracking or chipping / erosion around edges, but structure generally robust)
    - Poor (i.e. most bones with significant surface degradation and / or substantial erosion around edges).
    - Variable (substantially mixed between the above categories).
- Overall fragmentation. This was classed within the following three categories:
    - Mostly complete (A)
    - Moderately fragmented (B) – most bones in the context above 5cm in length or 25% completeness.
    - Severely fragmented (C) – most bones below 5cm in length or 25% completeness

    Where fragmentation is variable or falls between these categories, it was recorded as A/B or B/C.

- Comments. Any other taphonomic information, such as overall colouration of the assemblage, any mineral accretions, and any other evidence of significant perthotaxic or diagenetic processes was recorded in note form in this section.

At specimen level, the following information was recorded:

- Taxon
- Element
- Quantity
- Completeness relative to whole bone (recorded as <25%; c.50%, or >75%).
- Age data. This is predominantly element fusion information ("distal / proximal epiphysis fused / unfused") which can then be used to construct ageing profiles. Other information which could be recorded in this column includes if the bone is clearly foetal or neonate ("neonate"), or if a loose tooth was either unerupted or in wear. Any complete mandibles of cow, sheep, or pig were recorded separately using Grant (1982).
- Notable taphonomic features, recorded as comments. These could include:
    - Gnawing (carnivore / rodent)
    - Butchery marks (knife / chop / saw)
    - Mineral staining or accretion specific to the element.

All animal bone was identified to the lowest taxonomic level possible, with the aid of reference collections at the University of Bradford and the University of York.

At Thornham, single-context recording was not employed, and all finds from the site, including animal bone, were recorded by the excavators using small find number and 3D co-ordinates. Every fragment of animal bone, therefore, had an individual specimen number, with the exception of a few associated groups which were given a single number for the group. The "context" recording was therefore not used for this site, and all bone fragments were recorded using the "specimen level" recording protocol.

3.3.2.2 Caister-by-Yarmouth

Caister-by-Yarmouth (also known as Caister-on-Sea, and not to be confused with Caistor-by-Norwich (Myres & Green 1973)), is a coastal Roman fort in Norfolk with a later Anglo-Saxon cemetery on its periphery. While there is no absolute dating for the cemetery, it is expected to be mid-late Anglo-Saxon on the basis of burial style (supine, east-west, no grave goods) and location. Substantial intercutting means that the grave cuts were often not discernible. The cemetery was excavated by Green from 1951-1955, in the same programme of excavation as the fort, and both were published by Darling & Gurney (1993). The animal bones from all of the excavations were assessed by Mary Harman for the publication.

The cemetery lies outside the fort in "Area 4" and overlies Roman deposits outside of the outer defensive ditch of the fort, including ditch deposits, drain fillings, cobble patches and road deposits (Figure 3.3). These are considered to be the most likely source of the animal bone in the cemetery. In addition, above the graves, there are layers of lower ploughsoil and upper ploughsoil, which yielded substantial amounts of animal bone.

Animal bone from the features (graves and earlier Roman material) was assessed in full. In addition, a 1-box sample

Figure 3.3: Plan of Caister-by-Yarmouth excavations. The Anglo-Saxon cemetery in Area 4 is marked in red. After Darling & Gurney (1993).

(c.20% of total) of animal bone recovered from the ploughsoil was assessed for comparative purposes, as well as a 2-box sample from the Roman fort (Area 1; c.4% of total). The quantities of bone from each area are given in Table 3.2.

	Area 4			Area 1	
	Graves	Ploughsoil	Features	Ditch	Buildings
ID	179	172	122	90	129
Total	415	275	212	212	232
% ID	43%	62%	57%	42%	56%
Contexts	54	33	27	18	34
Average bones per context	7.69	8.33	7.85	11.78	6.82

Table 3.2: Animal bone quantities from different sample areas from Caister-by-Yarmouth.

Table 3.3 shows the species representation across the sample areas of the site. Each assemblage is dominated by cattle remains, with lesser amounts of sheep and pig, which corresponds to Harman's findings for the site. Harman has suggested that there are recovery biases associated with this assemblage, with smaller and unidentified fragments more regularly evading collection (1993: 223). As a result, there is less unidentified material in the assemblage than would be expected, and a higher proportion of cattle compared to medium mammal remains than is typical, even on Roman military sites. Between the areas, the highest proportion of identified material derives from the ploughsoil (62% ID), while the largest amounts of unidentified material derive from the ditch (42% ID) and graves (43% ID). Rather than representing taphonomic differences in fragmentation (in which case the material from the ploughsoil would be expected to have the highest proportion of unidentified bone), this probably reflects differences in collection policy between areas, with more care taken to collect more fragments from features than ploughsoil spreads. The evident collection biases need to be borne in mind when comparing samples. However, it is worth noting that the species representation from the graves sample is almost identical to that seen in the other areas sampled. No ABGs were recorded from the grave backfills, with the only ABG recognised being a partial juvenile dog skeleton from a drain filling in Area 4 (features).

	Area 4			Area 1		TOTAL
	Graves	Features	Ploughsoil	Ditch	Buildings	
cow	143	91	130	59	90	513
sheep	17	7	10	10	5	49
pig	27	7	11	13	15	73
horse		6		1		7
dog	3		1	1		5
hare			1		2	3
badger			1			1
red deer		1			2	3
roe deer	1					1
chicken	6	1		2	16	25
goose	3					3
small goose					1	1
duck			1		4	5
bird	2			2	1	5
large mammal	9	5	17	4	13	48
medium mammal	2	1	2	2		7
TOTAL	213	119	174	94	149	749

Table 3.3: Species representation from Caister-by-Yarmouth sample areas.

The taphonomic condition of the assemblage is relatively homogenous across the areas sampled. Bone is generally described as in good or reasonable condition and moderately fragmented, and dog gnawing and heavy butchery (chop) marks are both common. As with the predominance of cow elements, these features are typical of a Roman site.

If the bones in the grave fills are residual Roman material, the expectation is that there should be increased fragmentation and mechanical damage in comparison to non-reworked material (Area 1, Ditches & Buildings; Area 4 Features), but similar perthotaxic and diagenetic characteristics to the material from Area 4 Features. The colouration of bone – a broad mark of deposit chemistry – is relatively consistent across all of Area 4, described as a range of fawn to brown, and mostly mid-brown. By contrast, material from the ditch contexts demonstrates a slightly different range of colourations, described as pale fawn, mid-brown and reddish-brown. In terms of condition, some differences can be noted between the Area 4 Features and Area 1 Buildings, where the majority of assemblages from each context are described as in “good” condition (fresh surfaces, little erosion / marking), and the Area 4 graves and ploughsoil, where the majority of assemblages are described as “reasonable” condition (some cracking / flaking, some erosion / chipping), with only a very few described as either “good” or “poor”.

In terms of fragmentation, across the entire sampled assemblage most assemblages are described as “B – moderately fragmented” (Table 3.4). This is a typical result, since the categories of A and C are intended to describe deviations from average fragmentation in either direction. The ploughsoil and graves have the highest proportion of contexts falling into category C (15% and 19%, respectively), while the other areas contain very few highly fragmented contexts. All areas have a proportion of between 10% and 20% of contexts falling into category A (mostly complete) – the relatively high proportions of these are at least in part due to contexts consisting of single teeth, which tend to occur complete. The identified material shows a similar trend towards higher fragmentation in the ploughsoil and grave fill samples, with the highest proportion of material “25% and less complete” and the lowest proportions of “50% / 75% complete” material deriving from these areas, although the differences are not especially marked.

	Area 4			Area 1	
CONDITION	Graves	Ploughsoil	Features	Ditch	Buildings
Good	9.3	3.0	66.7	38.9	58.8
Reasonable	83.3	90.9	33.3	61.1	41.2
Poor	1.9	3.0			
Variable	5.6	3.0			
FRAGMENTATION					
A	17.0	9.0	14.8	22.2	11.7
B	63.0	72.7	85.2	72.2	85.2
C	19.0	15.1		5.5	29.4

Table 3.4: Observed condition and fragmentation of animal bone across different areas of Caister-by-Yarmouth. All figures given are % of total for area.

Despite the collection biases discussed earlier, a trend towards higher fragmentation and poorer condition is discernible both in the grave fills and the ploughsoil. Coupled with the similarity of material in the grave fills in colouration and species composition to other material in Area 4, it appears highly likely that this material is residual rather than representing a primary deposition event contemporary with the graves.

3.3.2.3 Thornham

The cemetery at Thornham is also on the site of a Roman fort, although unlike Caister-by-Yarmouth, evidence of Roman occupation at the site is slight (Gregory 1986). The cemetery is small, consisting of only 26 burials, all of which are located within the earthworks of the fort. While not dated, the location of the cemetery and small number of grave goods makes it likely this is a 7th century (Final Phase) cemetery (Hoggett 2010: 123).

The site as a whole yielded a small archive of animal bone, comprising only 123 fragments in total (Lawrence 1986). This includes material both from the fort and from the graves. As the site soil strata consist of ploughsoil covering thin loam, over a chalk substrate, bone preservation is understandably poor. The almost-complete absence of unidentified bone indicates that again, as with Caister-by-Yarmouth, there are some significant collection biases within this material. Another major problem in working with the archive is that single context recording has not been used at this site. All finds were individually numbered, and location information consists of "cutting" (trench) and depth, which makes reconstruction of associations and dating more problematic. As a large number of these small trenches were excavated on the site, the finds can be located relatively specifically (Figure 3.4). The animal bones are assumed to be Roman (following the published report by Lawrence (1986)), unless specifically associated with Anglo-Saxon graves.

None of the graves from the Thornham site contain animal bone deposits which fit the criteria detailed above. Two ABGs are present from the site – one pig skull with mandible, adjacent to one of the inhumation graves, and a similar sheep skull, from a different part of the site. Unfortunately, from the information provided, it is impossible to date these either to the Anglo-Saxon period or the Roman period, nor to demonstrate an association between the pig skull and Inhumation 7.

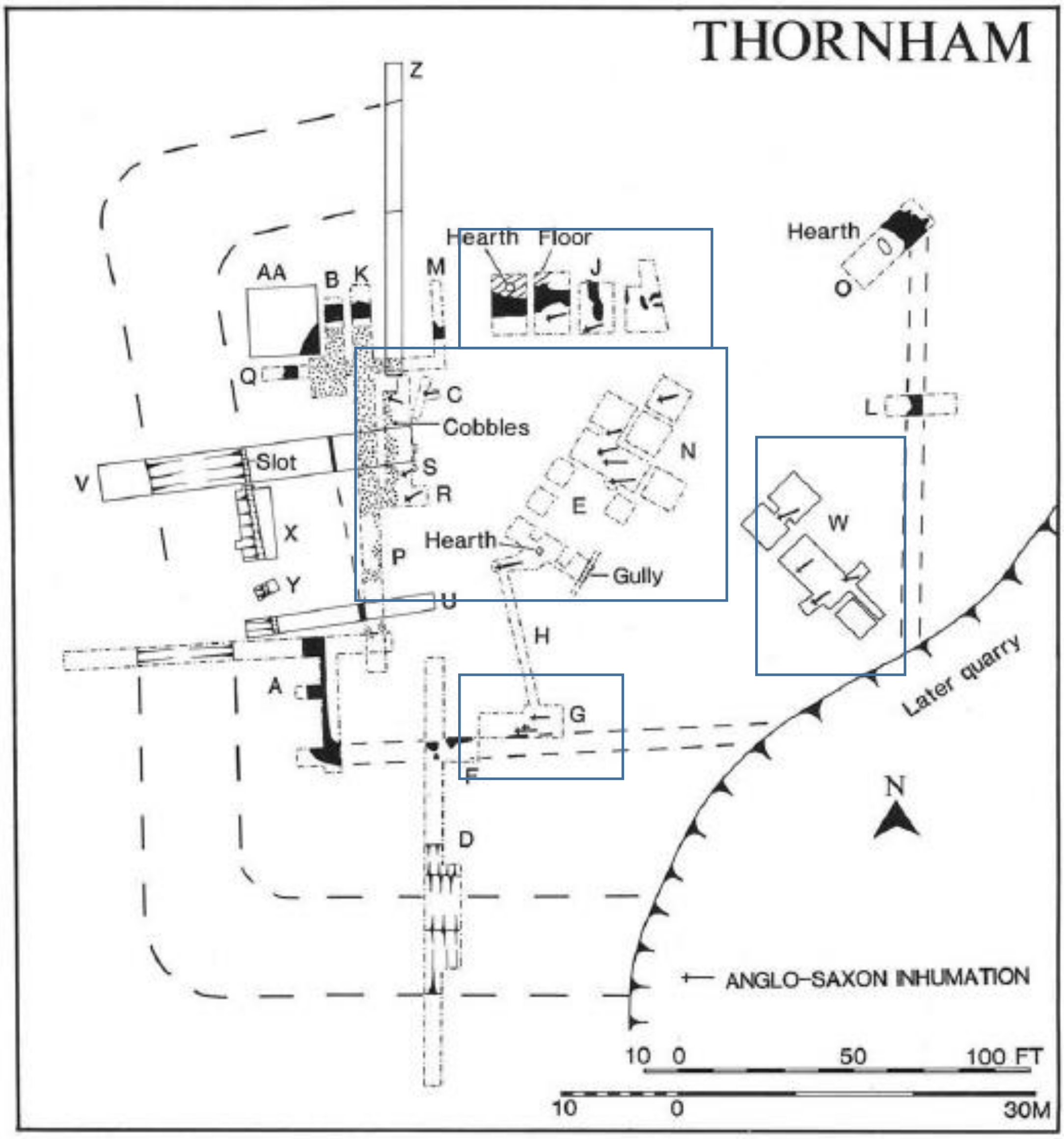


Figure 3.4: Plan of Thornham fort, after Gregory & Gurney (1986). Locations of inhumations are marked in blue.

A small amount of material (n = 17) is specifically associated with the Anglo-Saxon graves, presumably from within the fills. Table 3.5 shows the species representation for this material, in comparison to the assemblage from the rest of the site. As at Caister-by-Yarmouth, the material from the graves bears a strong resemblance to material from elsewhere on the site. There is a slight trend towards sheep and pig remains being better represented in the graves. The small number of fragments and its similarity in composition again to material from elsewhere on site makes this highly likely to represent reworked deposits, although collection biases and the aggressive soil conditions mean that there is limited taphonomic information to work with to confirm this.

Taxon	Grave	Other Feature
Cattle	1	24
Sheep/goat	7	17
Goat	2	
Pig	4	14
Horse		10
Dog		2
Fox		1
Carnivore	1	
Hare		1
Red deer		1
chicken		1
barn owl		1
large mammal	1	23
medium mammal		4
small mammal		1
TOTAL	16	100

Table 3.5: Species representation in graves compared to other features from Thornham fort.

The spatial distribution of the bone can be determined fairly precisely thanks to the multiplicity of small trenches across the site. Table 3.6 shows a fairly even distribution, with the largest amounts of bone from Trench D (southern ditch & rampart) and Trench J (hearth, floor, and inhumations). The inhumations in turn are spread across a wide area within the ramparts. Animal bone is associated with eight of these inhumations, across six different trenches. One of the eight inhumations could not be matched to a trench. Of the remaining seven inhumations, one derived from Trench J, where substantial amounts of Roman bone have been reported; and three derived from Trench S, which yielded little Roman animal bone, but also includes an area of Roman period cobbles. The other three inhumations – from Trenches H, N and W – are located in the centre of the fort, some distance from any recorded Roman activity. The only animal bone recovered from these trenches was associated with the inhumations.

Trench	Bone fragments
C	5
D	25
J	23
K	3
L	4
M	6
N	1
O	13
P	1
Q	12
S	3
unknown	10
Total	**106**

Table 3.6: Distribution of animal bone between trenches at Thornham fort.

The character of the assemblage from the graves, as described above, gives no cause to believe that this animal bone is not residual from Roman activity at the site. In addition, it is more common in graves that are located near to Roman activity than those that are located in more empty areas of the site. However, its presence in graves where there is no directly underlying Roman activity demonstrates the extent to which bone can be reworked laterally across a site, or be incorporated incidentally from later activity.

3.3.2.4 Bloodmoor Hill

Similar to Thornham, Bloodmoor Hill, Suffolk, is an inhumation cemetery with Final Phase characteristics, dated to the 7th-8th centuries (Lucy et al. 2009). It is a small cemetery, comprising only 27 burials, some of which are furnished and some unfurnished. It is located adjacent to a contemporary Anglo-Saxon settlement. Unlike Caister-by-Yarmouth and Thornham, the animal bone from this cemetery was not re-assessed, and data from the comprehensive published report (Higbee 2009) is used in the following analysis.

No Associated Bone Groups are reported from the cemetery at Bloodmoor Hill, and there are no animal bone deposits clearly placed into graves. Grave 27 contains a sheep mandible beside the left femur of a juvenile, but it is unclear whether this can be classed as a deliberate deposit. However, animal bone is present within the cemetery, with all but three graves containing animal bone within the fill. This has been described as probably residual, a conclusion supported by the other contents of the fills, which is typically burnt stone and pottery of Anglo-Saxon and Roman date. While no taphonomic information is available for this assemblage, Table 3.7 (a reproduction of Table 5.14 from Higbee 2009) shows the assemblage associated with the Anglo-Saxon graves compared to the animal bone from the Anglo-Saxon settlement.

Taxa	**Grave**	**Grubenhaus**	**Midden**	**Pit**	**Other feature**	**Total**
Cattle	27	823	309	591	174	1924
Sheep/goat	17	279	94	160	34	584
Pig	5	244	121	264	52	686
Horse		80	46	67	51	244
Dog		1				1
Red deer	1	4	1	1		7
Roe deer		7	1	4	1	13
Rabbit	4	67	21	1		93
Chicken		5		12		17
Goose		6		1		7
Bird		2		6		8
Other mammal		12		2		14
Fish		1		44		45
Frog				1		1
TOTAL	54	1538	594	1162	311	3659

Table 3.7: Identified animal bones from Anglo-Saxon graves and other settlement contexts from Bloodmoor Hill, based on Higbee (2009).

The settlement site shows a relatively typical pattern of being heavily cow-dominated, with sheep and then pig as the next most common taxa. Similarly, the assemblage from the graves appears to be a dilute version of the material deriving from the settlement, showing almost an identical pattern of taxon representation, although more restricted in terms of species diversity. As at Caister-by-Yarmouth and Thornham, without a distinct signature or any articulated remains, the simplest explanation remains that this material is residual, and probably derived initially from settlement contexts.

3.3.2.5 Comments

The above examples demonstrate that where there is an evident source of animal bone, using taphonomic data and other criteria bone from grave fills can be relatively confidently attributed to source assuming a null hypothesis that the bone is residual unless proven otherwise. In none of the cases above could the animal bone from grave fills be demonstrated to show a signature which distinguishes it from what can be expected from normal “background noise”, thus indicating that none of it can be convincingly attributed to feasting waste or any other contemporary activities. In many ways, this is an unsurprising finding, considering that Caister-by-Yarmouth, Thornham and Bloodmoor Hill are all 7th century or later, when furnished graves and other rituals involving animals in cemeteries are in decline (Chapter 1). However, the same problems and processes can be seen in earlier inhumation cemeteries which do contain animal offerings. At Great Chesterford, a substantial amount of bone was recovered from grave fills, much of it described as “residual Roman” and not further reported (Serjeantson 1994). Of the bone which was reported, the majority is also more likely to be residual, with very few offering deposits. The cemetery at Great Chesterford is located on the site with substantial Roman features, hence a high level of residuality is to be expected. Similarly, the cemetery at Castledyke South also yielded bone from a small number of grave fills (13), along with at least 11 genuine deposits. Again, where reported the bone from grave fills at this site appears to have no particularly distinct character, consisting mostly of pieces of large and small ungulate bone, and it is again described as perhaps “redeposited or included accidentally” (Nicholson 1998: 236). The source for this is unclear, although it is worth noting that of an assemblage of 1500 bone fragments, only 250 derived from the graves themselves (Nicholson 1998) – the character and source of the remainder of the assemblage is unfortunately unspecified. In both cases, the absence of taphonomic information and full reporting of both assemblage and source means that the opinion of the original analyst can only be followed.

Due to their considerable taphonomic problems and strong likelihood of residuality in most cases, animal bone from grave fills has not been included in this thesis unless there is compelling evidence otherwise (e.g. in the example of Ipswich Buttermarket, mentioned previously). However, there is evidence to indicate that mortuary feasting was occurring, and occurring within the cemetery itself (Section 5.3), raising the question of where the refuse from this feasting is ending up. One problem with the method suggested is that it may not be sufficiently sensitive to pick up where a small proportion of contemporary feasting waste is combining with residual refuse; nor if the feasting refuse does not have a distinct character from the supposed source of reworked material. The question of mortuary feasting is discussed further in Section 5.3.

3.4 Cremation Cemeteries: Taphonomy and Bias

The problems of creating a dataset with cremation cemeteries are substantially different to those faced with inhumation cemeteries. While the central problem of inhumation cemeteries is determining what does and does not count as a deliberate deposit, in cremation deposits this is typically substantially more clear-cut. The vast majority of cremated animal bone found with human cremations is readily interpreted as a deliberate part of the rite, although in a few cases it appears more likely that the bone was included unintentionally on the cremation pyre, either fleshed (e.g. one hedgehog from Spong Hill (Section 5.5)), or as residual bone incorporated into the pyre site (see Bond 1994). The occasional instance of uncremated bone within cremations, as well, is interpreted as incidental inclusions, as this generally consists of one or two isolated fragments.

However, this does not mean that all data from cremation cemeteries can be used uncritically, as there are several factors which have the potential to distort results. The principal problems are those of inter-observer variability and of truncation, generally as a result of plough damage. Both of these are more significant in cremation cemeteries than in inhumation cemeteries, and require taking into account when assessing the evidence from these cemeteries.

3.4.1 Inter-observer variability

The problem of inter-observer variability is rarely considered in zooarchaeology, as, for most species, good criteria exist for identification between taxa, and identifications of individual bones are rarely critically important. In cremations, accurate identification of bone is both peculiarly important – as each cremation represents a sample of an Associated Bone Group which is of greater individual import than the usual mass of disarticulated bone – and also peculiarly difficult, owing to the processes of fragmentation, heat shrinkage and warping associated with high temperatures. This is exacerbated in commingled human and animal cremations, as the difficulty here resides also in the accurate separation of human and animal bone. While various criteria have been proposed for this (e.g. Whyte 2001), in most cases the accuracy of separation and identification still rests on the experience of the osteologist and/or zooarchaeologist involved. In many cases, the initial separation of animal bone is done by the human osteologist in charge of analysis with only subsequent identification of the separated bone carried out by the zooarchaeologist. This requires a significant skill level on the part of the osteologist, and in most cases close co-operation between osteologist and zooarchaeologist during the process of separation and subsequent identification will improve the quality of identification.

Two cremation sites were reassessed as part of the study: Illington, Norfolk, and Snape, Suffolk. Both had animal bone previously recorded from the cremations. The reasons motivating reassessment were different: Illington was previously assessed in 1956, and some inaccuracies were expected; while Snape was assessed more recently, but the results appeared anomalous within the dataset. The results of the previous and current analysis on both sites are discussed below.

3.4.1.1 Illington

The initial assessment of the cremations from Illington was conducted by Calvin Wells in 1956, with the animal bone identified by Miss J.E. King from the British Museum (Davison et al 1993). During the reassessment of the site, it became clear that all of the animal bone which was identified in 1956 had been separated from the mass of the cremations and was subsequently lost. However, some animal bone was not identified as such in 1956, and was therefore unreported and still present within the human cremated bone in the archive. This was recorded and identified by the author, and combined with the earlier reports by King / Wells to produce an overall picture of the animal bone from the cemetery. Further details regarding the site at Illington are in Section 4.2; and a report on the cremated bone can be found in Appendix 2.

The results of the two analyses (King / Wells 1956; Rainsford 2017) are presented in Table 3.8. It is clear that underidentification was a problem in the earlier King / Wells assessment, with animal bone identified from 23 cremations and no multiple animal cremations identified. In the current assessment, bone was identified from 34 cremations, including 16 from which no animal bone had previously been identified. Previously unidentified elements of animal bone were recovered from all but four of the cremations in which Wells had recognised animal bone, including seven examples of multiple animal cremations.

Taxon	1956	2015	Total in crems
Horse	3	10	11
Sheep	6	7	10
Pig	2	3	4
Cattle	3	3	6
Dog	1		1
Antler		2	2
small wild goose		1	1
Bird		2	2
large mammal		6	6
medium mammal		6	6
Unidentified	7		7
TOTAL CREMS	23	34	45

Table 3.8: Comparison of results of 1956 and 2015 analyses of cremations from Illington

It has been argued previously that larger animals, including horses, are disproportionately underidentified in early cremation analyses compared to medium sized mammals such as sheep, as the bones of larger animals tend to fragment into smaller and less recognisable pieces (Bond 1996). In the 1956 analysis, sheep was the most common taxon, with horse only identified from three cremations, comprising four fragments in total. By contrast, in the current analysis, horse is the most commonly identified taxon from the site, with twenty-five fragments identified across 11 cremations. Cow remains infrequent in both analyses, although a number of cremations contain bone identified only as “large mammal” by the current analysis.

At the other end of the scale, several smaller taxa were missed entirely from the 1956 analysis which have now been identified. These comprise two examples of unworked deer antler from separate cremations, and three instances of bird bones – one identified as Galliforme (possible chicken) and one as a small wild goose. Cremated bird bone is hard to see unless the cremated bone is sieved, with most of the recognised bird bone recovered in this case from the 5mm fractions. Additionally, both antler and bird bone are not instantly recognisable as animal bone except by a trained analyst.

Figure 3.5 shows the element distribution recognised in the 1956 assessment compared to the current assessment. Analyses contemporary

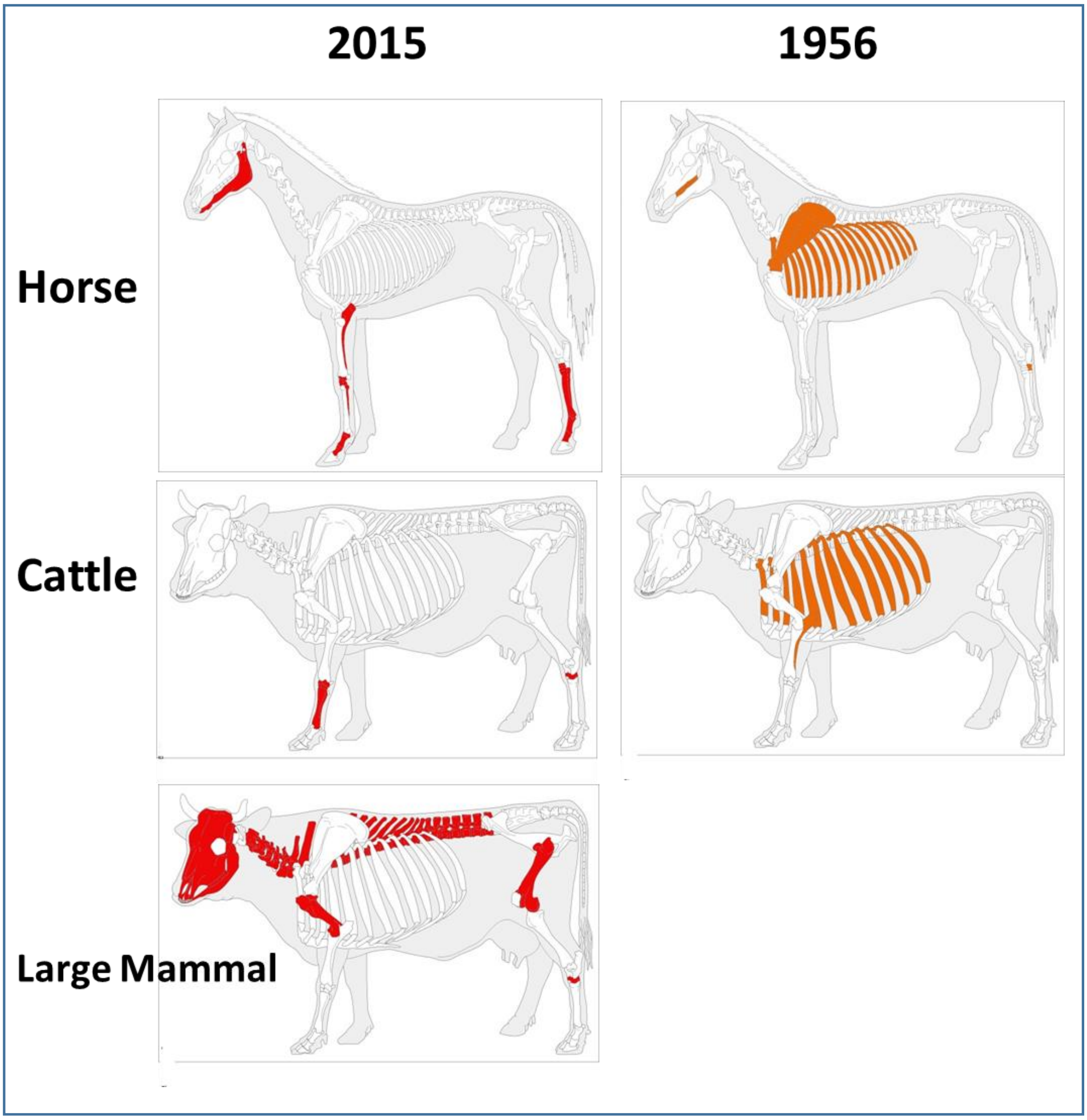
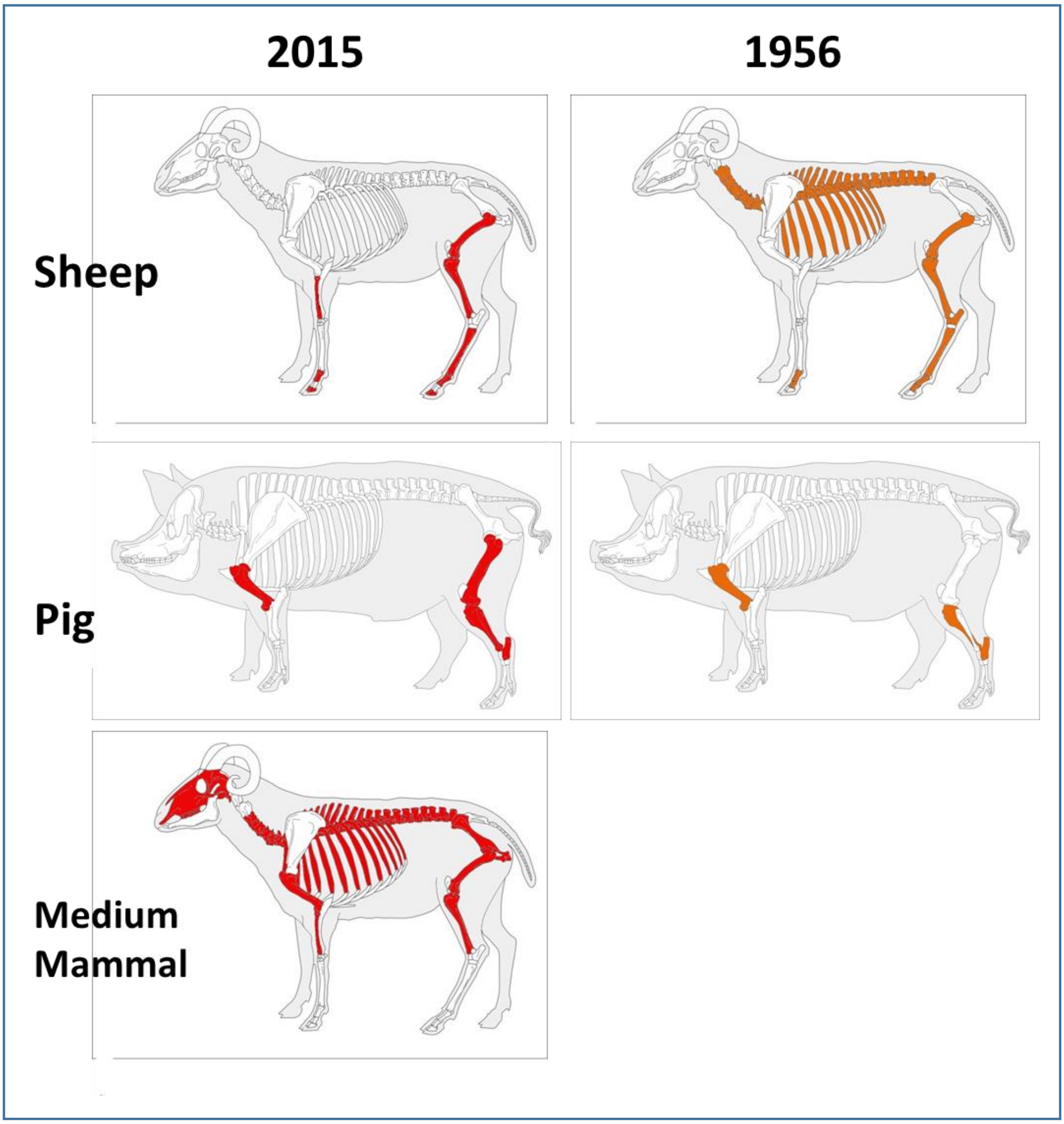


Figure 3.5 (cont. on next page): Elements of major taxa recognised by 1956 and 2015 assessments at Illington. Skeleton template source: ArcheoZoo.org.


2015
1956
Sheep
Pig
Medium
Mammal

with the 1956 assessment are well-known for recognising only cranial and foot elements from larger mammals, leading to the theory that horses were only present in cremations as “head-and-hoof” deposits (see Bond 1996). However, the elements identified from large mammals by Wells can best be described as arbitrary across the entire skeleton, with elements from the torso, cranium and legs present, although the absence of identified elements from the major limb bones (humerus, radius, femur and tibia) is notable. In the medium-sized mammals, identification is more complete, including both limb bones and some small elements such as tarsals and phalanges, although sheep is strongly biased towards the more robust elements of the back legs. Vertebrae and ribs were also typically identified to species by Wells & King, where these are only identified as far as size class in the current assessment. However, in all cases, the identification of only a small sample of the more recognisable and better-preserved elements is substantially misleading when considering element distributions.

In summary, the 1956 assessment shows features which have long been suspected as characteristic of early identifications in cremated material: artificial constriction of the species range; under-representation of large and small taxa; concomitant focus on medium mammals; and a low rate of identification of material present in the deposit. In this instance, larger mammals do not show the “head-and-hoof” distribution seen from other assessments – instead, the identification of elements seems to be rather sporadic. The extent to which reassessment has altered the results from Illington highlights the importance of reassessing other older sites frequently mentioned in the literature, such as Millgate, Nottinghamshire (Kinsley 1989) and Loveden Hill, Lincolnshire (Richards 1987).

3.4.1.2 Snape

The cremated bone from Snape was assessed by Mays & Steele in advance of the 2001 publication of the site (Mays & Steele 2001). The site was anomalous in the dataset for its low frequency of animal bone compared to other sites in the region (see below), and the low proportion of the animal bone recovered which could be identified to taxon, with eight out of eleven inclusions recorded only as unidentified animal bone. In addition, very few fragments of animal bone were identified from each cremation. Since there was no immediately evident reason for these anomalies, reassessment was indicated to test the effects of inter-observer variability.

Unfortunately, only the cremations from excavations in the 1980s were available for reassessment, totalling 23 cremations (out of an initial 51), among which only six had identified animal bone. For the majority of these cremations, less than five fragments of animal bone had been identified. This animal bone in most cases was not separated from the main body of the cremation. A further complication was added in that the cremations had been re-numbered for the publication and no comprehensive re-numbering list was readily available, therefore in some cases the archive material could not be matched up to the published details.

Table 3.9 presents a comparison of the results of the previous assessment and that of the current study. For five of the twenty-three cremations, the published record could not be matched to any of the cremated bone samples assessed, and these are recorded as “not seen”. Unfortunately, this also includes two cremations which had previously been recorded to have animal bone. In the majority of cases, the assessments concur in an absence of animal bone from the cremations. The current assessment in fact recorded fewer instances of animal bone than in the earlier assessment. In two cases where unidentified fragments of animal bone were recorded (crems 81 and 86), no animal bone was seen in the reassessment. Similarly, in cremation 83, where Mays & Steele recorded large mammal (mandible and tibia) fragments and medium mammal rib fragments, the current author recorded only two fragments of probable horse tibia. Cremation 82, on the other hand, yielded one fragment of previously-unidentified horse phalanx.

Taxon	2001	2016	Total crems
horse	1	2	3
large mammal	2	1	2
medium mammal	1		1
unid	7		7
TOTAL	11	3	13
Included in analysis	31	15	31

Table 3.9: Comparison of 2001 and 2016 assessments of cremated animal bone from Snape.

The extremely low incidence of animal bone at the Snape cemetery can be attributed to plough damage resulting in low mean weights for many of the cremations (see below), and heavy fragmentation in the cremations which do survive. Inter-observer variability is clearly an issue, with the current author unable to replicate some of the findings of the previous assessment, to the extent where it can perhaps be wondered if the animal bone was in fact separated from the cremations and archived separately. However, when dealing with such sparse and difficult evidence as at this cemetery, it is perhaps unsurprising that two analysts with different areas of expertise will recognise different elements in cremated bone. The very sparseness of this evidence means that any identification carries greater import than in richer assemblages, and thus any variation between analysts will perforce be more marked.

3.4.2 Ploughing and mean weight

After the antiquarians, plough disturbance and truncation is the most important taphonomic factor in determining how much cremated bone is available for assessment. While selection at the pyre site typically also acts to reduce the weight of bone originally present in the cremation urn, plough damage and other forms of truncation, which fragments urns and disperses the contents, has been noted at most sites in the dataset. The reduction of weight through plough damage or other factors is in fact an important biasing factor in the dataset, as cremations with lower weights are less likely to contain animal bone. Table 3.10 shows cremation weight and animal bone prevalence for Illington. Five of the six cremations which weighed more than 1kg contained animal bone (83%), compared to only six out of thirty-six of those weighing less than 100g (17%). Whilst this is a relatively intuitive pattern – humans with animals weigh heavier than just humans; conversely, the smaller the sample taken, the more it excludes – if the low weights are due to taphonomic or disturbance factors, it is likely to affect interpretations of prevalence between cemeteries.

Weight	Number	With AB	% with AB
1kg+	6	5	83.3
500g - 1kg	20	11	55.0
100g - 500g	48	16	33.3
<100g	36	6	16.7

Table 3.10: Number and proportion of cremations containing animal bone against weight of cremated bone at Illington, Norfolk.

A similar example can be seen at Field Dalling. Here, 36 cremations were recovered via plough disturbance, while the other 45 were recovered from subsequent excavations (see Appendix 3). Animal bone was recorded in 18 of the 81 cremation deposits, giving a low prevalence of only 22%. However, only two of these are from the plough-disturbed cremations. The mean weight for these disturbed cremations is 31g, indicating a very high level of damage (Table 3.11). The prevalence of animal bone in these deposits is similarly low (6%). For the cremations recovered through excavation, the mean weight is 689g, similar to non-plough damaged cremations from Spong Hill (Hills & Lucy 2013). Animal bone is present in 35% of cremations from this section of the site, a proportion comparable to that recorded from Illington.

	Damaged	Excavated
Total	36	45
Mean weight (g)	31.1	689.1
Prevalence of animal bone (%)	5.5	35.6

Table 3.11: Comparison of condition and animal bone prevalence from plough-scattered (damaged) cremations and excavated cremations from Field Dalling, Norfolk.

The mean weights and animal bone prevalence of twelve cremation cemeteries used in the dataset are presented in Table 3.12, below. The cemeteries represent a variety of sizes, rites (solely cremation / mixed rite) and regions, all of which might be expected to affect animal bone prevalence. Spearman's Rank Coefficient of Correlation demonstrates a weak positive correlation (0.405) between overall prevalence of animal bone in a cemetery and mean weight of cremation, indicating that while disturbance and truncation may be influencing factors, they are not the only factor determining prevalence. A further two cemeteries which were not included in this test – Mucking and Springfield Lyons – can also be mentioned. These have extremely low mean weights (Mucking – 147; Springfield Lyons – 176). At Springfield Lyons, the cremations have not been analysed due to their extremely poor condition (Tyler & Major 2005); similarly, at Mucking, very little information could be recovered from the cremations and animal bone prevalence was extremely low (Mays 2009). Clearly, in these extreme cases, the level of truncation and disturbance is the determining factor in what can be retrieved from these cremations.

Site	County	Crems	# with AB	% with AB	Mean weight (g)
Spong Hill	Norfolk	2323		46.4	514
Illington	Norfolk	112	40	35.7	314
Field Dalling	Norfolk	81	18	22	392
Lakenheath	Suffolk	8	5	62.5	609
Tranmer House	Suffolk	13	9	69.2	511
Snape	Suffolk	51	12	23.5	223
Elsham	Lincolnshire	566	256	45.2	523
Cleatham	Lincolnshire	977	380	38.9	525
Great Chesterford	Cambridgeshire	33	5	15.2	345
Minerva	Cambridgeshire	30	3	10	680
Rayleigh	Essex	145	10	6.9	183
St Mary's Stadium	Hampshire	28	7	25	209

Table 3.12: Mean weight vs proportion of cremations with animal bone from major cremation sites in eastern England and St Mary's Stadium, Hampshire (McKinley 2005)

Table 3.13 shows prevalence in the same cemeteries against the analysts responsible for identification of animal bone from the cremations. Here, the correlation is disconcertingly much greater, with McKinley / Bond regularly responsible for the cemeteries with the highest prevalence of animal bone, followed by Squires, followed by the current author. This pattern is even clearer if the higher prevalence from the undisturbed Field Dalling cremations is taken into account. While this would at first suggest that inter-observer variability and, particularly, experience with cremated material is a highly important factor in determining prevalence, it is also the case that the distribution of analysts to material is not random. Excepting Lakenheath and Tranmer House, both of which have unique factors which are acting to create unusually high prevalences, all the cemeteries with the highest prevalence of animal bone are large, single rite cemeteries in the Norfolk and Lincolnshire region, described by Hills & Lucy (2013) as the “Core Cremating Zone”. Lower prevalences seem to persist in smaller, mixed rite cemeteries outside this area. The fact that particular specialists tend to work on material from particular areas, or to address specific research questions, may have exacerbated this pattern, with increasing knowledge and experience of a particular area tending to increase the frequency and accuracy of identifications; however, this is probably not as determining a factor as it appears at first sight. The influence of regionality is discussed further in Chapter 6.

Site	County	% with AB	Analyst
Spong Hill	Norfolk	46.4	McKinley / Bond
Illington	Norfolk	35.7	Williams-Ward / Rainsford
Field Dalling	Norfolk	22	Rainsford
Lakenheath	Suffolk	62.5	McKinley / Bond
Tranmer House	Suffolk	69.2	McKinley / Bond
Snape	Suffolk	23.5	Mays
Elsham	Lincolnshire	45.2	Squires
Cleatham	Lincolnshire	38.9	Squires
Great Chesterford	Cambridgeshire	15.2	Waldron / Serjeantson
Minerva	Cambridgeshire	10	Waldron / Powers
Rayleigh	Essex	6.9	Compton / Powers
St Mary's Stadium	Hampshire	25	McKinley / Serjeantson

Table 3.13: Proportion of cremations with animal bone vs cremation analyst from major cremation cemeteries in eastern England.

3.5 Summary

The question posed at the outset of this section was, what is the quality and availability of data from Anglo-Saxon cemeteries from the perspective of a project studying animal inclusions? First and most importantly, the available dataset has been shown to be limited. While numerous Anglo-Saxon cemeteries have been excavated, in relatively few cases is the bone fraction preserved for reanalysis, and for the majority of cemeteries excavated prior to the modern era, reanalysis is required as the original reporting is insufficient. For inhumation cemeteries, preservation is a key limiting factor in eastern England, where both human and animal bone is often destroyed in inimical soil conditions. Where material is preserved, the problems of separating genuine deposition from residual or intrusive material is the next most significant problem, with contextual information relating bones to graves one of the most important tools in resolving this. Within cremation cemeteries, date of excavation is the most significant factor in determining how useful a cemetery is likely to be. If the cemetery was excavated before c.1960, cremated bone is highly unlikely to have been retained. The reanalysis of Illington has demonstrated that the earliest analyses of cremated animal bone are likely to be unreliable in their results, with the problems lying largely in the separation between human and animal bone, with much animal bone passing unrecognised. For later cemeteries, inter-observer variability remains a problem – the material is difficult, and different analysts with different specialities may recognise different elements or species more readily than others. Low cremated bone weight, often caused by plough damage, also has a minor overall effect on the prevalence and visibility of animal bone in cremations, although this is only one factor of many. The biasing factors and variability in quality of the cemeteries available make this a complex dataset to work with, and it is clear that the number of cemeteries from which valid and viable data is available is limited. The selection of sites within careful criteria, although potentially reducing this dataset further, is clearly necessary in order to make valid comparisons between cemeteries and across regions of the country and to produce viable data, and this is described further in the next chapter.

Chapter 4: Collecting a Dataset

In order to assess the role of animals in mortuary and potential variability between cemeteries, the aim is to collect a dataset from across a large geographic area (Eastern England) to a consistent methodology, which can then be used to directly compare cemeteries. This chapter describes the parameters for site and assemblage selection, and methods of data collection, taking account of the difficulties described in the preceding chapter. The major sites used in the dataset are then presented. For the most part, the dataset consists of secondary data collected from published or unpublished site reports. In addition, two cremation sites were analysed as part of this project (Illington, Norfolk; Field Dalling, Norfolk), and additional targeted analysis was carried out on a further four collections (Spong Hill, Norfolk; Caistor-by-Norwich, Norfolk; Markshall, Norfolk; Snape, Suffolk). A brief description of what was done in each case is presented in Study Materials (Section 4.2), and methodologies, results and site reports are presented in the Appendices.

4.1 Data Collection: Main Dataset

4.1.1 Parameters: Site Selection

One of the fundamental aims in creating the dataset was to collect the data in a systematic manner within certain parameters which would allow for comparison of different types of site and discussion of the prevalence of animal remains across different cemeteries, with negative results as important as positive results. The starting point chosen was the Historic Environment Records for the five counties selected for analysis, which were kindly provided by staff at the relevant county councils. This includes the HERs held by the unitary authority areas of North Lincolnshire and North East Lincolnshire, which fall within the bounds of the historic county of Lincolnshire, but excludes those held by the unitary authorities of Peterborough (Cambridgeshire) and Southend-on-Sea (Essex), from which areas data was collected more opportunistically from published reports. This generated a relatively comprehensive list of all interventions which have yielded Early Anglo-Saxon funerary remains. The lists were then winnowed to select only sites which fulfilled the following criteria:

- **had been excavated.** Many cemetery sites recorded in recent years are known only from survey or Portable Antiquities Scheme (PAS) hotspot data, and animal bone will mostly not have been recovered from these.
- **with a *start date* falling within the 5th – 7th centuries AD.**
- **with more than 5 burials.** Isolated burials and small groups of burials form a substantial proportion of all funerary remains found, from nineteenth century urns in the vicarage back garden to occasional burials within later period commercial excavations. These may represent outliers from known cemeteries, or small samples from as-yet unexcavated cemeteries, or genuinely isolated burials. As they were unable in most cases to provide useful data, the decision was taken to exclude these from analysis.
- **which had been excavated and/or substantially reported since 1960.** 1960 was selected as a cut-off since sites reported before this date are less likely to fulfil the basic minimum quality of data reporting (Chapter 3), and each site would have had to be assessed on a case-by-case basis prior to inclusion.
- **with a report which could be accessed.** This limited the sites to those which have been published, and those with unpublished (grey literature) site reports accessible via the Archaeological Data Service (ADS) Grey Literature Library or elsewhere online.
- **with basic minimum quality of data reporting.** For a site to be useable within the study, it is essential that the animal and human bone was recorded in such a way that basic taxonomic information and the context in which the animal bone is found (what and where) is clear from the published literature. While this was a particular problem for sites excavated prior to 1960, this information could also be unclear from certain more modern reports, particularly in the case of some commercial excavations where animal bone has been reported with no reference to context.

As discussed in the preceding chapter, the vast majority of recorded sites do not fulfil these criteria. This is for a variety of reasons, including excavation methods, historical development of osteological techniques and cemetery studies, and curation policies. Present-day archaeology in Britain is broadly subject to a consensus methodology whereby single-context recording and recovery, retention and post-excavation analysis of all finds including human and animal bone is standard across most types of excavation. This current consensus is the result of many years of development of thought, and sites excavated historically do not typically conform to modern standards of recording or curation, limiting the data available to this study.

4.1.2 Recording Methods

Data from the selected sites was recorded in a two-stage process. Firstly, basic information from all relevant sites was recorded into the “Site Record” sheet, which aims to describe all sites surveyed and the overall prevalence of animal bone at these sites. Secondly, for those cemeteries where animal bone was present, this was recorded into the “Taxon Record” sheet, which provides data for all other analysis.

4.1.2.1 Site Record

The fields recorded in the “Site Record” were as follows:

- **Site name.** Used as unique identifier.
- **Location**. Expressed as modern county.
- **Date.** Where the date is uncertain (i.e. given only as “early Anglo-Saxon” on the basis of rite or material culture), this is expressed as “5th – 7th century” (following Fern 2010).
- **Preservation.** (Good / acceptable / poor). This can be taken as a comment on overall data quality, combining both physical preservation and the quality of data (preservation by record).
- **Total number of burials excavated.**
- **Inhumation burial present?** (Y/N)
- **Cremation burial present?** (Y/N)

- **Animal bone present?** (Y/N)
- **Total number of inhumation burials.**
- **Total number of cremation burials.**

This dataset demonstrates where animal bone is present and, as significantly, where it is absent. Additionally, for the sites where it is absent, it is possible to suggest whether the absence is due to reasons of preservation or genuine Anglo-Saxon practice.

4.1.2.2 Taxon Record

For those sites were animal inclusions were present, these were recorded individually in as much detail as the records would permit. An animal inclusion is here defined as any bone which has not been worked into an object which has an evident purpose; which retains sufficient characteristics to be identified to an animal; or in certain cases of poor preservation, is represented by an organic stain which unequivocally derives from animal origin. All forms of animal inclusion were recorded initially, including ABGs not associated with human graves (e.g. the horses at Great Chesterford, Essex) and bone within fills, including those where the provenance is uncertain.

It should be emphasised, as well, that the following recording protocol was used for animal bone from both inhumation and cremation rites. Inhumation and cremation animal bone datasets tend to differ in terms of both quantity and quality of evidence, with cremation yielding animal bone more frequently, but inhumation deposits providing more information in terms of the structure of the deposit and the grave context. The differences between the two rites have generally led to different methods of recording, analysis and presentation of data to be used for each, making the rites difficult to compare. The advantage of using a single recording protocol is that comparable information can be recorded from the two highly different datasets, even if the range of information available and its most informative aspects will vary between the two rites.

Not all fields could be completed in every case, depending on the information available from each deposit. The fields recorded are as follows:

- **Site**
- **Animal Bone deposit ID.** This is the unique identifier, and is applied to each *individual deposit of animal bone which represents an animal in a burial or other mortuary context.* These can also be described as Associated Bone Groups where the MNI = 1. Where there are multiple taxa included in a single grave (e.g. horse + sheep), they are given separate records and IDs. In the case that the elements clearly show an MNI of two within the taxa, if separable, each individual receives a separate ID. The intention of this is to place the *animal as sacrificed* at the centre of analysis, rather than the grave assemblage as a whole.
- **Context** from which the deposit derives, as numbered in site records (e.g. Cremation 1212).
- **Rite / Practice** (Inhumation / Cremation / Other)
- **Taxon**, given to the lowest possible level.
- **Quantity.** This information was often unavailable. Where specific information was unavailable, the column was either left blank or the deposit described as “ABG”.
- **Element.** These are presented in the form of a list of elements present (if available).
- **Body area.** (Head / ribs / vert / upper front leg / lower front leg / upper hind leg / lower hind leg / foot). This is a contraction of the element data, adapted from the system for recording Associated Bone Groups proposed by Morris (2011). In the current adaptation, upper leg is taken to include all elements from scapula / pelvis down to the knee joint; and lower leg is taken to include all elements from the knee joint down to the tarsals and metapodials. Where metapodials could not be assigned to hindleg or foreleg, they are categorised as “foot”. A list of all body areas present is given for each inclusion. In some cases, only body area information was available, rather than specific element data.

- **Condition**. Any comments specific to the taphonomic condition of the deposit which may influence interpretation. E.g. unburnt bone from cremation deposits is described specifically as “Unburnt”.
- **Curated?** (Y/N). Bone is classed as curated if it is worn from handling, mounted, pierced for suspension, or otherwise represents a single element of the animal for which the simplest explanation is that it has been purposely included as a grave good. This stops short of including any bone which has been worked into an object with a clear (or unclear) purpose, such as antler or ivory rings, for both methodological and theoretical reasons. Worked bone objects are not necessarily seen as linked to the animal from which the bone derives. Methodologically, worked bone is typically hard to identify to taxon by standard morphological means, requiring identification using biomolecular techniques such as ZooMS, putting this beyond the scope of the current project. Bone representing skins, such as the bear claws from Spong Hill, are not classed as curated since in this instance it is the absent and assumed skin which is curated, rather than the bones per se.
- **Age (of animal)**, expressed in months / years. This follows the original analysis, if age is given. If only epiphyseal fusion data was given, this was converted into approximate calendar age using Silver (1969) for domestic animals. The categories “adult / juvenile” were used if no more specific information was available. For taxa where epiphyseal fusion data was given but could not readily be translated to calendar age (e.g. for wild taxa such as foxes), the fusion information was recorded.
- **Sex (of animal).** This follows information given in the original analysis.
- **Butchery**. Described, including element and location.
- **Pathology**
- **Taphonomy**. Any notable taphonomic impacts not described in “condition”, including gnawing.

- **Comments**. Any other points relating to the animal deposit which are considered potentially relevant to interpretation.

The second section of the recording form deals with the burial context of the animal bone deposit:

- **Person?** (Y/N). Is there a human burial present, or is the animal bone unassociated?
- **Age (of human).** This is discussed further below (Section 4.1.3), but follows the original analysis initially in recording.
- **Sex (of human)**. This again follows the original analysis, and is discussed further below (Section 4.1.3).
- **Date.** If the burial is phased or otherwise more specifically dated within the cemetery date range, this is recorded.
- **Location of AB**. This describes the placing of the animal bone within the grave tableaux for inhumation burials, in relation to the urn (within, without, in ring ditch etc.) for cremation burials, and within the cemetery for unassociated deposits. It is a critical piece of information in reconstructing both taphonomic history (and therefore deposit validity) and subsequently, the possible meaning of the deposit and its role in grave construction.
- **Other burial goods** (listed).
- **Comments**. Any other points relating to the person, grave or deposit which are considered potentially relevant to interpretation.

4.1.3 Data Analysis

4.1.3.1 Determining Deposits in Inhumation Cemeteries

In inhumation cemeteries, and to a lesser extent in cremation cemeteries, movement of animal bone resulting in intrusive or residual inclusions within graves is a particular problem which can serve to obscure genuine mortuary activity (see Chapter 3.3). Initially, all animal bone which could potentially be relevant to mortuary practices – i.e. in any type of association with a grave or cemetery and considered to be vaguely contemporary – was recorded following the protocols above. Subsequently, material recorded from inhumation cemeteries was reconsidered, and the following criteria applied to define material which is suitable for inclusion in the dataset:

1. The bone is part of an Associated Bone Group

OR

2. The bone is curated / worked.

OR

3. The bone is incontrovertibly associated with the grave assemblage.

AND

4. The bone has a clear location, either as part of the grave assemblage, a discrete lens within the fill, or within a separate feature.

The rationale & effect of these criteria have been discussed previously in Chapter 3.

4.1.3.2 Solving the Medium Mammal Problem

Animal bone deposits within graves most often occur not as single elements, but as Associated Bone Groups representing either a complete or partial animal. Within these ABGs, some elements can be identified positively to taxon – most readily, those from the legs and head area – and some can in general only be identified to size category – including ribs, vertebrae, and any shaft fragments without notable features. For inhumations, this is a non-problem, since deposits tend to be limited to one or sometimes two taxa. Additionally, the bones often remain spatially in articulation, making it very clear that, for example, these ribs belonged to this sheep. In these situations, the analyst will regularly elide categories, and positively define the ribs as “sheep” without further discussion. The situation in cremations is more complex for a number of reasons, including more multiple animal deposits, lack of articulation, and increased fragmentation leading to lower probability of identifying elements to species. An average cremation containing a single horse, therefore, will regularly be recorded as containing large mammal shaft fragments, large mammal vertebrae, large mammal cranial fragments, and a single horse sesamoid. This has substantial implications for understanding how much of the animal was originally cremated, as many major skeletal elements cannot be identified to species. Additionally, this can also act to artificially inflate the number of apparent taxa within a cremation. The above example can be described accurately as containing “horse + large mammal remains”, which implies to the unwary reader the presence of two taxa, while it is in fact more plausible that the entire assemblage derives from one animal.

For all burials, but particularly cremations, this problem was circumvented by using the assumption that the simplest explanation for a deposit is correct (a principle also referred to as Occam’s Razor). If there is a *single taxon of a particular size identified to species* within the cremation (i.e. horse), then *all unidentified elements of that size from that cremation are also assumed to belong to that taxon* (i.e. all large mammal elements in the above example are therefore horse). While the large mammal remains could in theory belong to a hitherto unidentified cow or deer, this is not the simplest explanation, as it posits the presence of another taxon for which there is no other evidence. The cremation is therefore considered to contain a single taxon, and the category “large mammal” is omitted from analytical tables. If there is *more than one* taxon of that size (i.e. cremation contains elements identified to horse and to cow), *no such assumption is made* – or rather, the assumption is that the large mammal remains will be a mixture of the two identified taxa, in uncertain proportions. The cremation is considered to contain only the two identified taxa, and large mammal is still omitted from analytical tables. If the cremation contains *unidentified remains of a different size category to any identified taxa within that cremation* (i.e. cremation contains large mammal and sheep), then there are assumed to be two different taxa within the cremation, and large mammal is included in all analytical tables.

4.1.3.3 Categorising Inclusions

Two questions which are critical to analysis of an animal deposit in a grave are how many animals are contained within the grave, and how much of each animal has been included. These could not be represented simply within the initial recording protocol, so an important first stage of analysis was to add two fields to describe these attributes within the Taxon Record sheets. These two fields are as described below:

- **Multiple / single** (M/S/UNC). This describes how many animals a single cremation or inhumation contains.
  - Single (S) - Deposit contains single taxon (including via Occam's Razor, see above).
  - Multiple (M) - Deposit contains multiple animal taxa.
  - Uncoded (UNC) - This is a record of unidentified bone which has been attributed to another taxa in this deposit and therefore doesn't need to be recorded (see above).
- **Portion.** (W/MP/P/S/UNC). This describes how much of each animal has been included.
  - Whole (W) - approximately five different body areas represented.
  - Multiple portions (MP) - elements represented from two or more non-contiguous body areas.
  - Portion (P) – elements represented only from a single contiguous body area.
  - Single bone (S) - only one element mentioned. Most ribs are described as single simply because the quantity of ribs within the deposit is often not mentioned, so the quantity must therefore be assumed to be 1.
  - Uncoded (UNC) - This is a record of unidentified bone which has been attributed to another taxa in this deposit and therefore doesn't need to be recorded (see above).

The "Portion" field is especially relevant to cremations and domestic animals, and more detail can be found in Chapter 5 (Section 5.3.3). Analytically, the "whole" and "multiple portions" categories are conceptually similar, and are typically combined in later analysis, as are the “portion” and “single” categories.

4.1.3.4 Human Identity – Age estimation

Due to the construction of the dataset, information on the age and sex of human burials derives from multiple different secondary sources and from multiple different analysts. With sex assessment, this is relatively unproblematic, as the majority of sex assessments fall into one of three categories – male, female, or unknown. Age data, however, can and has been categorised in many different ways, yielding a highly disparate dataset. For analysis, then, these have been simplified into three broad age categories, which are as follows:

- **Juvenile.** This includes all individuals up to the age of puberty (c.12-14 years). Skeletally immature individuals are relatively easy to distinguish from mature adults, and therefore this transition can be expected to be robust across multiple different systems of categorisation. In addition, there are indications from grave goods, predominantly within inhumations, of a status change associated with puberty, although this is less significant than the adoption of full adult status at 18-20 years (Stoodley 2011). While this subsumes several other obvious “life changes”, such as the transition from neonate or infant to child, the numbers of burials attributable to these categories tends to be limited, and the decision was taken to group them at least initially in the interests of sample size.

- **Adult (including adolescent).** This describes any individual which is skeletally mature.

- **Older adult.** This describes a subset of adults which are starting to show wear and tear on the skeleton (tooth wear, age-related pathologies) and which are therefore described in categorisation as “older adult”, “elderly”, “older mature”, etc. In terms of age, this is usually over 35-40 years. While older adults are not counted within the adult category, the boundary between "adult" and "older adult" is substantially more difficult to discern skeletally than that between "adult" and "juvenile", and many individuals included in the adult category cannot be assigned to older adult simply because there is little or no evidence to suggest a more specific age. While more difficult to discern and less discussed, there is some evidence suggesting changes in social status relating to seniority (Stoodley 2011). In particular, this may be relevant to animal inclusions since there is a certain physical capability required in order to, for example, ride a horse; and the diminishment of this with age may affect the animal offerings to which the individual is entitled.

While these categories are used throughout the text, Chapter 6.2 discusses age, transitions in social status, and the inclusion of animals in more depth.

4.1.3.5 Human Identity – Sex estimation and Gender

The assessment of sex for human burials in all cases follows the original report, or, in the case of reassessed sites such as Illington, the most recent assessment by an osteoarchaeologist. Evidently, there has been substantial refinement of osteological techniques for both age and sex attribution in the past fifty years, and therefore some inaccuracies can be expected from older site reports. In particular, it was not always specified in site reports whether the sex determination was based on osteological analysis or gendered grave goods. The correlation between biological sex and culturally assigned gender was assumed to be close in early Anglo-Saxon burials, to the extent that sexing via grave goods was considered acceptable into the 1980s, but it is now considered highly problematic to assume sex from grave goods (Lucy 1997; Lucy 2011; Stoodley 2011). Where possible, sex is always given as biological sex based on skeletal analysis, but the lack of specification of methods may cause some inaccuracies. Without reassessment of human primary material, however, which is beyond the remit of this project and sometimes beyond the realms of possibility, there was no option but to use the data as given.

Even where recent osteological analysis has been undertaken, it is not always possible to indicate binary sex (male / female) for specific burials, depending on the condition of the skeleton in question. There is no universally-accepted method of determining sex osteologically in pre-pubescent skeletons (Brickley 2004: 23), so no sex information was recorded for juveniles in the database. The two critical elements for sex assessment in adult burials are the pelvis and the cranium as the most sexually dimorphic elements in the human skeleton (Mays & Cox 2000: 118). Where both are present, osteological sexing has been indicated to be accurate in well over 90% of cases (Mays & Cox 2000: 120). However, there is still variation in the degree to which skeletons will show masculine or feminine characteristics, and it is considered advisable to base sex assessment on a number of observed traits rather than relying on the evidence of one or two (McKinley 1994:20). The efficacy of sex estimation therefore rests on the condition of the skeleton and the presence of diagnostic traits. The sex of a burial cannot always be determined osteologically, either due to indeterminate morphology or poor skeletal condition, and in these circumstances it is recorded as "indeterminate" or "unknown". This is a particular problem within cremated material, with confident determination of sex impossible for the majority of cremations. At Spong Hill, McKinley applied a four-tier system of categorisation for sex, depending on the number of observable traits in the cremation: unquestioned (m/f), probable (?m/?f), possible (??m/??f), and unknown (McKinley 1994: 20). Unquestioned male or female sex was recorded for less than 7% of all cremations at Spong Hill (165 out of 2540; McKinley 1994). McKinley's methodology has been widely adopted for other cremation sites (e.g. Squires 2011; McKinley 2015; Mays & Steele 2001). Sex assessments from older cremation analyses are likely to be inaccurate, with the early assessments by Wells (1960) over-estimating the degree to which sex could be attributed to cremated material (Williams-Ward pers. comm., June 2015), and therefore for the most part these have also been avoided within the study.

Throughout the study, where "sex" is discussed this therefore relates to the biological sex of the burial, as estimated through osteological assessment of human remains. This differs from gender, which has been defined as "the cultural interpretation of sexual difference" (Gilchrist 2012: xv), and which is related to but not defined by biological sex (Sørenson 2013). Since the 1980s, Western attitudes towards what constitutes masculinity and femininity have been recognised as culturally-specific, with multiple different constructions of gender recognised both cross-culturally and in the past, including some constructions with more than two sexes, effectively problematizing gender and developing this as a valid field of archaeological enquiry (Díaz-Andreu 2005; Sørenson 2013). The construction of gender has also been recognised as dependant on the age of the person, leading to a "life course" approach to understanding the intersection between these two different aspects of identity (Gilchrist 2004; Lucy 2011). Furnished burial is one of the major sources which have been used to understand early Anglo-Saxon gender perceptions and gender roles, generating a substantial literature (e.g. Geake 1997; Lucy 1997; 2011; Stoodley 1999). Poole (2013b) has highlighted some of the ways in which interactions with animals may have been gendered and contributed to identity formation in the Anglo-Saxon period, including the association of intact male horses (stallions) with masculinity, and dairying with femininity. However, while the relevance of animals to gender studies in archaeology is an important and fertile area, this is beyond the scope of this thesis, and only the relationship of animal offerings to biological sex in burials is addressed.

4.2 Study Materials: Cemeteries

In total, 47 cemeteries from Eastern England were incorporated into the dataset (Figure 4.1). Full details of these can be found in Appendix 4. Brief descriptions are given below of selected sites from this dataset, either because they have yielded the majority of the data for this study, have been subject to reassessment of primary material, or otherwise have a less-than-straightforward data history.

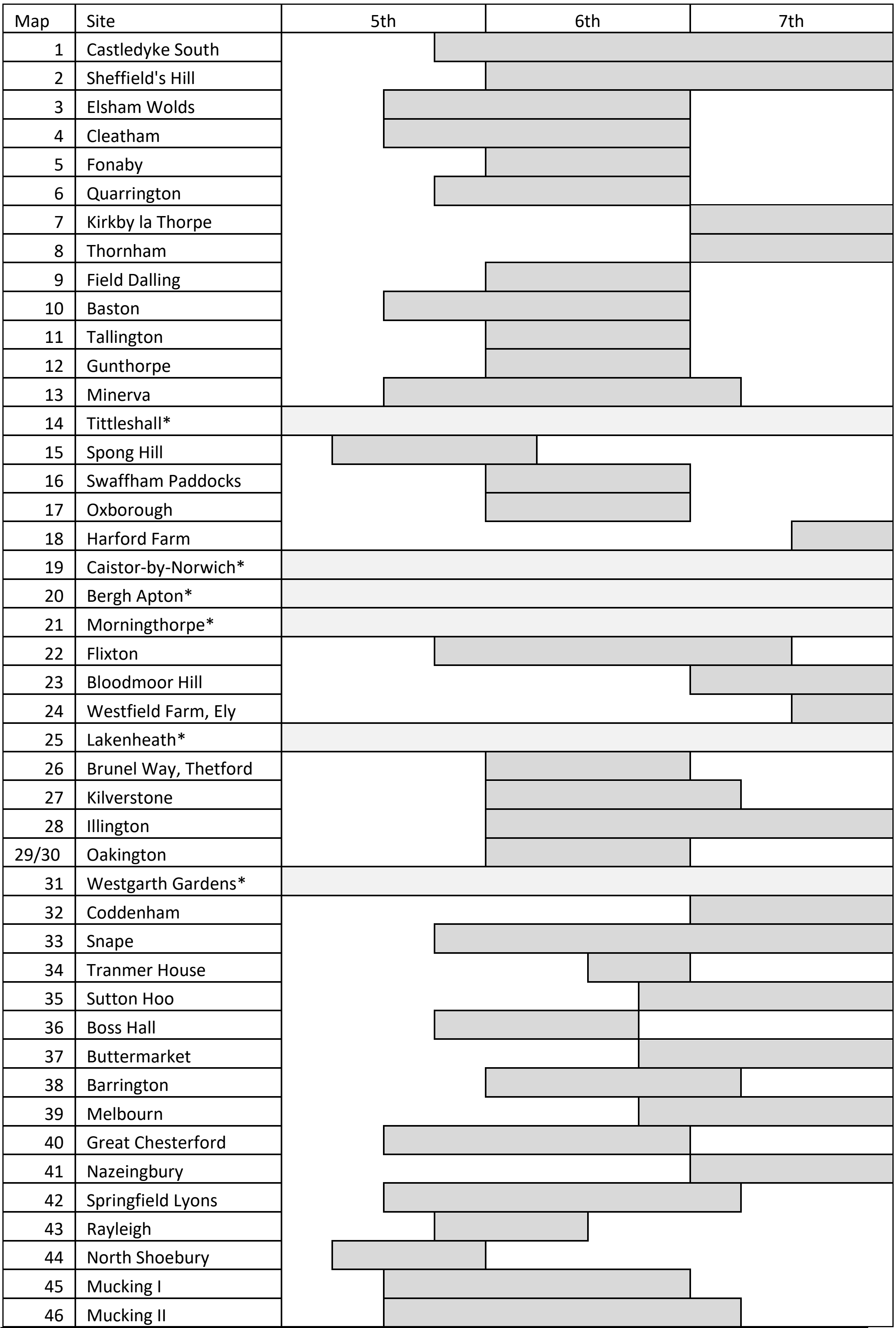


Figure 4.1: Date ranges of cemetery sites included in Eastern England dataset. * denotes specific dating (beyond 5th-7th century or Early Anglo-Saxon) was unavailable at time of writing.

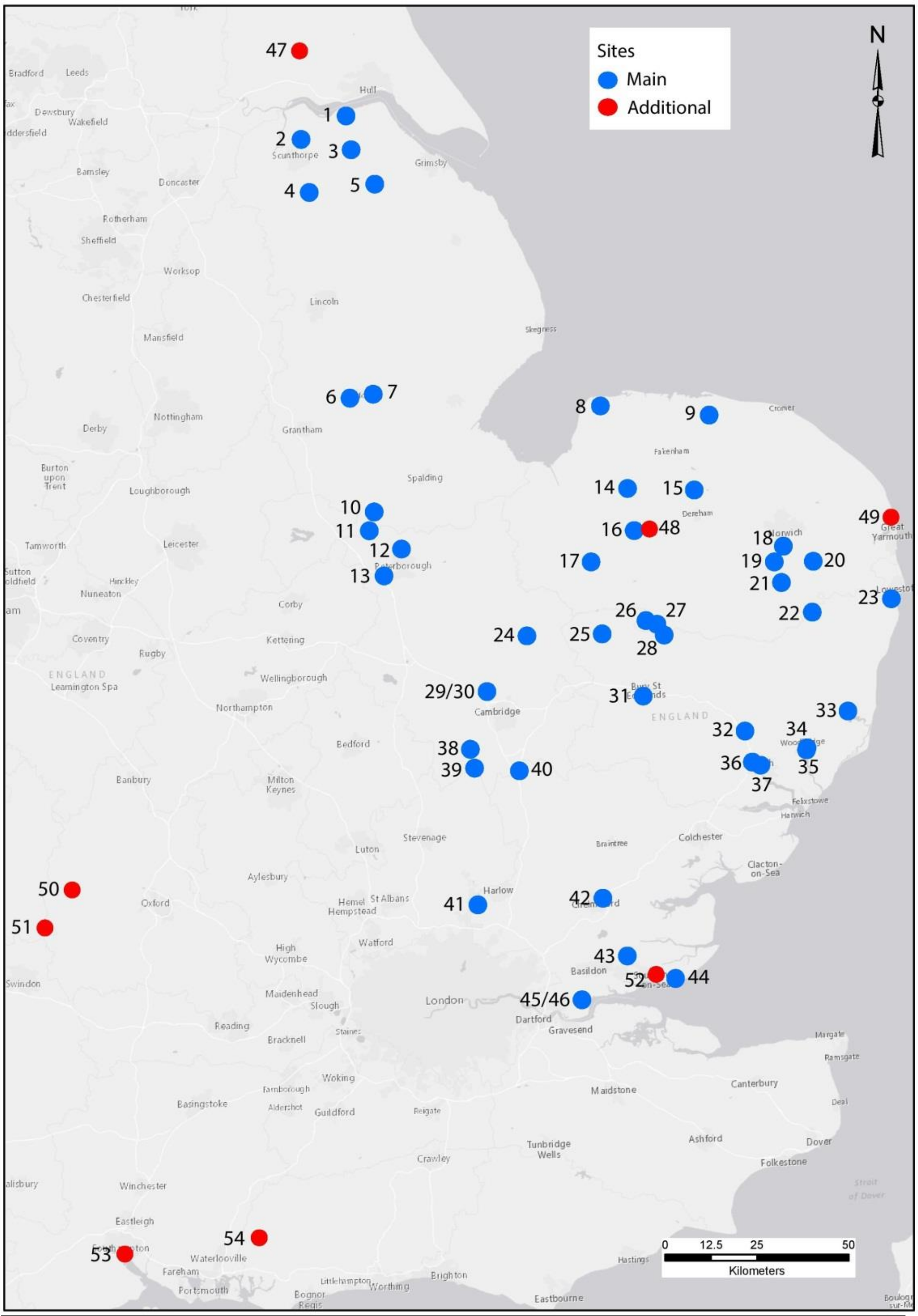


Figure 4.2: Location of cemeteries included in Eastern England dataset, including key (next page). Additional cemeteries mentioned in the text are included in red. Further information on these sites is in Appendix 4 (Gazetteer).

Cemetery	County	Number
EASTERN ENGLAND		
Castledyke South	Lincolnshire	1
Sheffields Hill	Lincolnshire	2
Elsham	Lincolnshire	3
Cleatham	Lincolnshire	4
Fonaby	Lincolnshire	5
Quarrington	Lincolnshire	6
Kirkby la Thorpe	Lincolnshire	7
Thornham	Norfolk	8
Field Dalling	Norfolk	9
Baston	Lincolnshire	10
Tallington	Lincolnshire	11
Gunthorpe	Cambridgeshire	12
Minerva	Cambridgeshire	13
Tittleshall	Norfolk	14
Spong Hill	Norfolk	15
Swaffham Paddocks	Norfolk	16
Oxborough	Norfolk	17
Harford Farm	Norfolk	18
Caistor-by-Norwich & Markshall	Norfolk	19
Bergh Apton	Norfolk	20
Morningthorpe	Norfolk	21
Flixton	Suffolk	22
Bloodmoor Hill	Suffolk	23
Westfield Farm, Ely	Cambridgeshire	24
Lakenheath	Suffolk	25
Brunel Way, Thetford	Norfolk	26
Kilverstone	Norfolk	27
Illington	Norfolk	28
Oakington I	Cambridgeshire	29
Oakington II	Cambridgeshire	30
Westgarth Gardens	Suffolk	31
Coddenham	Suffolk	32
Snape	Suffolk	33
Tranmer House	Suffolk	34
Sutton Hoo	Suffolk	35
Boss Hall	Suffolk	36
Buttermarket	Suffolk	37
Barrington	Cambridgeshire	38
Water Lane, Melbourn	Cambridgeshire	39
Great Chesterford	Essex	40
Nazeingbury	Essex	41
Springfield Lyons	Essex	42
Rayleigh	Essex	43
North Shoebury	Essex	44
Mucking I	Essex	45
Mucking II	Essex	46
ADDITIONAL		
Sancton	Yorkshire	47
Sporle-with-Palgrave	Norfolk	48
Caister-by-Yarmouth	Norfolk	49
Asthall Barrow	Oxfordshire	50
Butler's Field	Gloucestershire	51
Prittlewell	Essex	52
St Mary's Stadium	Hampshire	53
Apple Down	Sussex	54

4.2.1 Norfolk

4.2.1.1 Caistor-by-Norwich & Markshall (map no. 19)

The excavation history of Caistor-by-Norwich and Markshall has been recounted elsewhere (Chapter 3). The surviving material from Caistor-by-Norwich had last been assessed by Calvin Wells in the early 1970s (Wells 1973a), and was held by Norwich Castle Museum. This was re-recorded by the current analyst to the standards required in this study, and some identifications, especially of bird bones, were refined or corrected. The results are presented in Appendix 6.

Several cremations from Markshall were held by Norwich Castle Museum, and these were reassessed in the same manner as Illington. In general, the separation of human and animal bone by Calvin Wells was effective, and therefore the separated animal bone was re-recorded and identifications refined in the same manner as Caistor-by-Norwich.

4.2.1.2 Field Dalling (map no. 9)

Field Dalling is situated in north Norfolk, and is the most northerly of the Norfolk cremation sites discussed in this report. The site lies 500m to the north of the present village of Saxlingham. In 1975, 60 cremations were discovered when the field in which the cemetery was located was deep-ploughed. The location of 30 of these cremations was plotted. A subsequent three-day trial excavation was undertaken by staff from the Norfolk Archaeological Unit, Norwich Castle Museum, Norfolk Archaeological Rescue Group and Norfolk Research Committee, in order to ascertain the extent to which the cemetery had been affected by ploughing. A further 47 cremations were found by this excavation, of which twenty were *in situ* and the rest disturbed by plough damage. Two inhumation burials were also excavated. Later metal detecting campaigns were carried out at the site, but no further excavation, as no further damage from ploughing was anticipated. The material archive is held by Norwich Castle Museum. The Field Dalling cemetery is currently unpublished, and is being written up by K. Penn (pers. comm. Sept 2015).

Cremated bone was recorded from 81 contexts. In addition, seven contexts contained unburnt animal bone, which was recorded on the same protocol for animal bone from inhumation cemeteries (see above). The cremations were assessed using the standard assessment protocol by the author, but the human remains have not been assessed.

4.2.1.3 Illington (map no. 28)

Illington lies near the Norfolk/Suffolk border, 11km northeast of Thetford (Davison et al. 1993). The cemetery was excavated rapidly in nine days by Group Captain G.M. Knocker in 1949 in response to disturbance by deep ploughing, but not published until 1993 (Davison et al. 1993). The cemetery is predominantly cremation, comprising 196 urned cremations, three inhumations, and three unurned cremations. The full extent of the cemetery is not known, and it is likely more remains unexcavated. It is dated to the 6th century on the basis of brooch typology, although this dating is relatively tentative and no start or end dates are firmly delineated.

The cremated human bone was initially assessed by Dr Calvin Wells in 1956, and cremated animal bone by Miss J.E. King of the British Museum (Natural History). The cremated bone was reassessed for this project. Not all excavated cremation urns contained bone: 104 bone groups were assessed by Calvin Wells, and 112 were assessed in the current analysis. It became clear during analysis that the animal bone identified in 1956 had been separated from the remainder of the cremation for identification, and has subsequently been lost. The identifications from the 1956 report are therefore included in the current analysis, although they could not be verified thanks to the lack of the physical bone. The human bone was reassessed concurrently by Michelle Williams-Ward.

4.2.1.4 Spong Hill (map no. 15)

Spong Hill is the largest and most extensively studied early Anglo-Saxon cemetery in the country. The site was excavated between 1972 and 1984 by a research team in advance of gravel extraction, and more than two thousand cremations and 57 inhumations were recovered. The site is extensively published, predominantly in nine monographs dealing with different aspects of the site (Hills 1997, Hills & Penn 1980; Hills et al. 1984; Hills et al. 1987; Hills et al. 1994; McKinley 1994; Rickett 1995; Hills & Lucy 2013). Full assessment of the cremated animal bone was undertaken by Julie Bond alongside analysis of the human bone by Jacqui McKinley, and both were published in McKinley (1994). A new phasing of the cemetery based on extensive dating and typological seriation was published in 2013 (Hills & Lucy 2013).

Spong Hill has defined what we know about animals in Anglo-Saxon burial, as it is the largest single data set which has been assessed by a zooarchaeologist. The original published report (Bond 1994) discusses in depth the frequency, element and age representation of the taxa represented. Different taxa and combinations of taxa are also linked to human biological identity (Bond 1994; McKinley 1994) and subsequently to the new phasing (Hills & Lucy 2013). The data has also been used by a variety of other authors in discussing the role of animals in the cremation rite and construction of identity (e.g. Williams 2001; Ravn 2003).

While a great deal of information is therefore already known regarding Spong Hill, certain gaps still exist within the dataset. Due to the way the data was structured, it has so far been impossible to interrogate the animal bone data relative to identity and phasing at the level of element representation. Re-digitisation of the animal bone from original records was therefore included as part of the project in order to address this. In addition, access to comparative avian reference material was limited in the original study, meaning that birds other than domestic fowl, duck and goose were rarely identified. Therefore, a targeted reanalysis was carried out to identify these previously unidentified bird bones, with the generous help of Terry O'Connor and the reference collection at the University of York. These re-identifications are presented in Appendix 5.

4.2.1.5 Thornham (map no. 8)

Thornham fort lies on the north coast of Norfolk, near to Brancaster Roman fort. It was excavated from 1955-60 by the Norfolk Research Committee under the direction of Rainbird Clarke (Gregory 1986). The site was initially a late 2nd century Roman enclosure consisting of a ditch, rampart, and sparse evidence of occupation. In the 7th century, the enclosure was repurposed as the site of a small Anglo-Saxon cemetery, containing at least 24 graves. These can be broadly defined as “Final Phase”, with minimal furnishings – half the burials were unfurnished, and the remainder contain only buckles and knives. The west-east orientation of all of the burials and their location within a Roman fort might suggest a Christian identity (Hoggett 2010), although orientation is not necessarily an indicator of religion during the 7th century (Blair 2005).

While the excavations of the Roman fort were published (Gregory 1986), the Anglo-Saxon cemetery has not been. The human remains were initially assessed by Calvin Wells in the 1960s (Wells unpub.), and were reassessed by M. Williams-Ward. A small amount of animal bone was recovered from the site, and this was reported by Lawrence (1986), but consists only of a list of taxa. Contextual assessment is made more difficult by the fact that all of the finds from the site, including animal bone, were recorded by trench number and spatial co-ordinates rather than the more usual context approach. As a result, the faunal material from both the fort and the subsequent cemetery were reassessed as part of the current project. Both physical and paper archives from the site are held by Norwich Castle Museum.

4.2.2 Suffolk

4.2.2.1 Lakenheath (map no. 25)

A large inhumation cemetery dating to the 5th-7th century was uncovered across several excavations from the 1950s onwards (predominantly 1997 – 2001) at RAF Eriswell / Lakenheath. The cemetery comprised over 400 inhumation burials and 7 cremations, including several unurned deposits which appear to be comprised predominantly of animal bone (McKinley forthcoming). These unurned animal cremations are unparalleled elsewhere, and it is suggested these may have been the accessory deposits to a human cremation which has been deposited elsewhere (McKinley forthcoming). With regard to the inhumations, bone condition is mixed within the cemetery, due to the intersection of two different soil types – chalk boulder clay, which was subjected to cryoturbation creating an uneven surface onto which windblown sand settled. Preservation conditions are visibly better on the chalk boulder clay than the acidic sand (Figure 4.3). However, even the partial preservation makes this cemetery extremely important in this area of highly aggressive soil conditions. Animal bone deposits are present with a select number of inhumations, including two horse burials. The unburnt animal bone was assessed by Terry O'Connor (unpub. report) and animal bone from cremations was assessed by the author and Julie Bond. Further contextual information was provided by Jo Caruth and is used with permission.

Figure 4.3: Variable preservation conditions at Lakenheath, Suffolk. Photo: T. O'Connor.

4.2.2.2 Snape (map no. 33)

Snape is a mixed inhumation and cremation cemetery in use from the late 5th to 7th century. It is situated a short distance up the coast from Sutton Hoo, and similarly is an inland site overlooking a river. Several burial mounds were present at the site, although most of the cemetery is a flat cemetery.

The site has been excavated in across several campaigns. These are, primarily, an antiquarian excavation of the 19th century, which found one ship burial and a substantial number of cremations; an excavation by Ipswich

Museum associated with the digging of a sewer trench in the 1970s, which found 9 cremations; and a substantial research campaign beginning in 1985. The cemetery is a mixed inhumation and cremation cemetery, with cremation and inhumation rite broadly contemporary (cremation late 5th – 7th, inhumation mid 6th to 7th century). One bridled horse head was found included with a ship burial found during the 1985 campaign. Cremations from both of the latter seasons (1970s / 1985) were assessed by Mays & Steele, and only small quantities of animal bone were identified. As a result, material from the 1980s excavation held by Suffolk County Council Archaeology Service was reassessed as part of the project. However, it proved difficult to replicate the earlier observations in terms of the animal bone (Chapter 3). Due to the difficulty of matching up the results, the original results have been used in this study except in those one or two cases where reassessment was able to refine the original identifications (e.g. by identifying to species / taxon bone which had previously been unidentified).

4.2.2.3 Sutton Hoo & Tranmer House (map no. 34 & 35)

Sutton Hoo is the most famous early Anglo-Saxon burial site in England, an atypical cemetery consisting of a handful of mound burials dated between the late 6th and late 7th centuries (Carver 2005). A later 8th century execution cemetery was also found on the site, although this falls outside the scope of this study. Sutton Hoo has been the subject of many campaigns of research and excavation, including the excavation of Mound 1 by Brown and Phillips in 1938-39, Bruce-Mitford in 1965-71, and Carver in 1983-93 (Carver 2005). Both cremation and inhumation burials were found within the mounds, in addition to some burials without burial mounds. Most of the burials showed evidence of rich furnishing, with ship burials in Mounds 1 and 2, although many were subject to grave robbing in the 17th century and later. In general, inhumed bone from the site was extremely poorly preserved due to acidic soil conditions, although this did vary slightly across the site.

Cremated bone was recovered from all three phases of excavation at the site. The cremated bone excavated by Bruce-Mitford was assessed by

Gejvall (1975), who reported both human and animal bone. The animal bone from the cremations excavated during the 1983-93 campaign was assessed by Julie Bond (2005). A collection of cremated bone was found within the silver dish from Mound 1 in the 1938-39 excavations, which is unparalleled in any other inhumation burial of the same date from Britain. Unfortunately, this was never assessed and was unavailable to this study. One inhumation (Mound 17) contained a horse burial and a portion of sheep, which was analysed by Terry O'Connor (1994).

Tranmer House is a mid-late 6th century cremation and inhumation cemetery adjacent to Sutton Hoo, excavated in 2000 during construction works for the new visitor centre (Fern 2015). 19 inhumations and 13 cremations were recorded, although the excavation is believed to represent only a small part of a larger cemetery. As at Sutton Hoo, inhumations at Tranmer House survived very poorly due to the local soil conditions, and no animal bone was recorded associated with the furnished inhumations. Animal bone from the cremations was assessed by Bond & Mustchin (2015). The proximity of the two cemeteries and the earlier date of Tranmer House indicate that this was a precursor to the elite cemetery at Sutton Hoo (Fern 2015).

4.2.3 Lincolnshire

4.2.3.1 Castledyke South (map no. 1)

Castledyke South is an inhumation cemetery in North Lincolnshire, in the town of Barton-on-Humber. Rescue excavation in 1989-90 in advance of building yielded 196 burials dating from the late 5th to late 7th century, estimated to represent approximately half of the total cemetery. Most of the animal remains associated with graves date to phase 2B (7th century), with the exception of the beaver tooth amulet, which dates to phase 2A (6th century). Preservation of bone was unusually good, due to its location on chalk. Animal bone was assessed by Nicholson (1998), and associations with grave and location within grave were also reported. This dataset was therefore used without further primary analysis.

4.2.3.2 Cleatham & Elsham Wolds (map no. 3 & 4)

Cleatham is a large, predominantly cremation cemetery in North Lincolnshire, dated to the 5th – 6th centuries. The main phase of excavation at the site started in 1985, when the introduction of deep ploughing prompted rescue excavations. Over 1200 cremation urns and 62 inhumations were excavated (Leahy 2007). Elsham Wolds is a similarly large cremation cemetery from the same period, yielding 625 cremations and five inhumations. It was excavated in 1975-76 in advance of road construction (Leahy 2007). While Cleatham has been fully published (Leahy 2007), Elsham Wolds has not yet been published to a similar standard. The cremated material from both cemeteries was analysed by Kirsty Squires as part of a doctoral thesis (Squires 2011). While analysis focused on the human remains, the presence of animal bone in cremations was recorded and identifications made where possible. These identifications tend to be biased towards the more recognisable and/or unusual taxa – bears are well-represented, while the domestic mammals are under-identified. At the time of writing, the animal bone has not been fully assessed. The data from these is therefore used only to a limited extent in this study, in keeping with the information which is available. The data is used in discussion of general prevalence of animal bone and those identifications which have been made are added to broader analysis of identity. These cemeteries are, however, highly significant both for their size and for their relatively recent excavation and high quality of post-excavation work, and therefore a full assessment of the animal from these cremation cemeteries is of high importance to provide comparanda to Spong Hill and Sancton.

4.2.4 Cambridgeshire & Essex

4.2.4.1 Mucking (map no. 45 & 46)

Mucking comprises two cemeteries adjacent to a contemporary settlement, excavated as part of large-scale excavations on a multi-period site between 1965 and 1978 (Hirst & Clarke 2009). Mucking I is a partial inhumation cemetery dating between the mid-5th and late 6th centuries, containing just over 60 inhumations. Mucking II is a much larger mixed rite cemetery, with more than 270 inhumations and 463 cremations. Preservation of bone in inhumation graves was poor, due to the sand / gravel substrate, and no animal bone is reported from any inhumations. Preservation within the cremation burials was also poor, with the average weight of cremated bone per burial from Mucking (147.4g) less than half of the average weight from the Norfolk cemeteries (Chapter 3). In addition, nearly half of the cremations from Mucking (180 out of 402) weighed around 25g (Mays 2009). The most likely explanations for this are earlier deep-ploughing of the site, soil conditions, or a practice of poor collection from the pyre site (Hirst & Clarke 2009: 18). Animal bone was recorded from only ten of the over 400 cremations, and none contained more than a few fragments of animal bone (Mays 2009). Due to the extremely poor quality of the available data, data from Mucking has been used minimally in the study.

Chapter 5: Animals in Graves in Early Anglo-Saxon Eastern England

5.1 Results

Data was recorded from a total of 46 cemeteries in Eastern England, comprising 8913 burials. Cremation burials are better-represented in the data set than inhumation burials (5045 compared to 3868 inhumation burials), largely due to the very large size of some of the cremation cemeteries. Inhumations are present, sometimes in small numbers, at every site recorded, while cremations were recorded at 28 of the 46 cemeteries.

The majority of cremation burials derive from Norfolk and Lincolnshire (4300 burials, 85%), reflecting the disproportionate effect of the three largest cemeteries in the dataset – Spong Hill, Cleatham and Elsham. Spong Hill alone accounts for 46% of the entire number of cremations in the dataset, and is more than twice the size of the next largest cemetery (Cleatham – 977 burials). Only seven cemeteries in the dataset comprise more than 100 cremation burials, and of these only Spong Hill and Illington have had both the human and animal remains fully analysed. Since Spong Hill is an order of magnitude larger than Illington, it is inevitable that Spong Hill has dominated discussion of animal remains in cremations and continues to exert a substantial influence.

Essex, Cambridgeshire and Suffolk have no substantial cremation cemeteries which have both survived and been analysed. From Suffolk, several cemeteries with smaller numbers of cremations, such as Snape, Sutton Hoo, Tranmer House and Lakenheath, have been analysed to a high standard, and as such there is good information from this county. By contrast, minimal information is available from Mucking, the only large cremation cemetery in Essex, and there are no cemeteries with a majority of cremation burials from Cambridgeshire. The smaller numbers of cremations in Cambridgeshire can be attributed to regional patterns where mixed cemeteries are more common in this area. However, it is also the case that the county has suffered from antiquarians, which, as with everywhere else, has acted to substantially reduce the numbers of cremations available for analysis.

In total, then, 2197 cremations included in the dataset contain animal bone, giving an overall prevalence of 44%. Of these, 1326 (60%) derive from Spong Hill. A further 29% (636 burials) derive from the incompletely-analysed Elsham Wolds and Cleatham cemeteries. In quantity, therefore, all other cremation burials containing animal bone comprise only 11% of the total (Figure 5.1; Table 5.1).

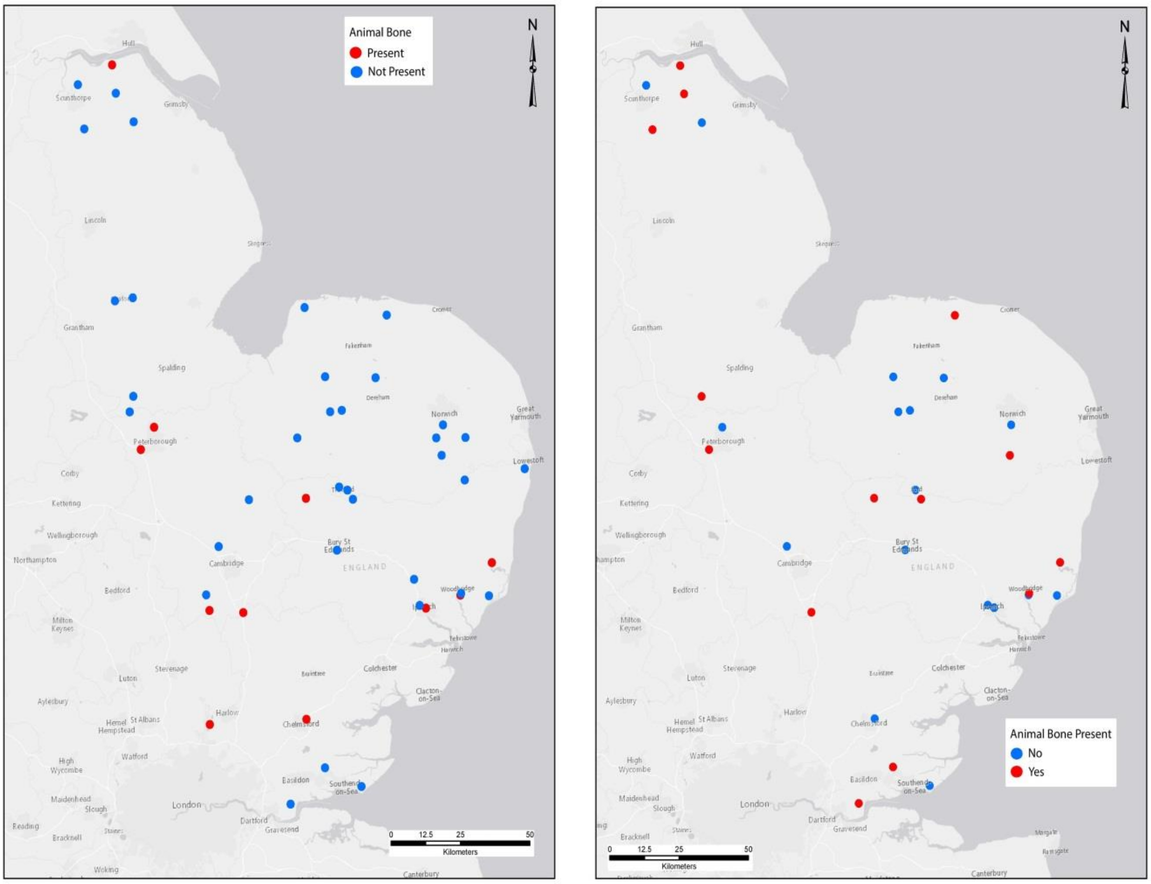


Figure 5.1: Presence and absence of animal bone from inhumation (left) and cremation (right) cemeteries from Eastern England. Cemeteries where animal bone is present are marked in red; those without any animal inclusions are marked in blue.

The 3868 inhumation burials recorded are distributed more evenly across the study area, with the largest group in Norfolk (991 burials) and the smallest in Lincolnshire (471 burials). However, prevalence is low compared to the cremation burials. Animal bone was recorded from 177 burials within the dataset. However, many of these records were of animal bone deriving from fills, or otherwise of uncertain provenance, and when the stringent criteria developed in Chapters 3 and 4 were applied, only 54 examples were admissible within the study. This gives an overall prevalence of 1.4% of inhumation graves containing animal bone. The majority of these deposits are derived from two cemeteries – Castledyke South, Lincolnshire (10 burials) and Lakenheath, Suffolk (12 burials) (Figure 5.1; Table 5.1). Prevalence is still extremely low in both of these cemeteries, but both benefit from being large cemeteries with areas of good preservation. Prevalence is highest at Sutton Hoo (12.5%), although this is partially an artefact of the low numbers of inhumation burials, as well as reflecting the unusual high status of the cemetery. At all other cemeteries, prevalence is 5% of burials or less.

As discussed in Chapter 3, bone preservation is a serious issue affecting inhumation burials across East Anglia. This is particularly marked in Norfolk, where 95% of inhumation burials in the dataset derive from cemeteries where the condition is recorded as "poor", indicating that bone – both human and animal - is essentially not preserved in these cemeteries (Table 5.2). This is less marked in the other counties included in the dataset, although the same problems pertain in Suffolk, Essex and Lincolnshire. In total, approximately 50% of inhumation burials in the dataset derive from cemeteries where poor bone preservation means that minimal information is recoverable relating to the use of animals. However, while this has clearly affected the dataset, in several cemeteries where preservation is poor important deposits of animal bone have been recovered. These include Springfield Lyons, where the recovered horse head survived only as teeth; Buttermarket, where pig remains were present in a grave with unusually good preservation for the site; and Snape, where animals were represented both by bone but also by sand stains, which were sufficiently carefully excavated to indicate a probable animal origin. However, in these cemeteries and other affected by poor preservation, it is impossible to tell how many other deposits have been lost.

County	Cremation		Inhumation	
	Site	No. with AB	Site	No. with AB
Norfolk	Spong Hill	1326		
	Illington	39		
	Caistor-by-Norwich	19		
	Field Dalling	17		
	Markshall	2		
	Morningthorpe	2		
Suffolk	Snape	12	Snape	1
	Tranmer House	9	Buttermarket	2
	Sutton Hoo	5	Sutton Hoo	1
	Lakenheath	6	Lakenheath	12
Cambridgeshire	Great Chesterford	5	Great Chesterford	4
	Minerva	3	Oakington	2
			Gunthorpe	1
			Melbourne	1
Essex			Springfield Lyons	1
	Baston	5		
	Rayleigh	21		
	Mucking II	5		
Lincolnshire	Castledyke South	1	Castledyke South	10
	Cleatham	380		
	Elsham	256		

Table 5.1: Frequency of burials containing animal bone from cemetery sites in the Eastern England dataset.

County	Sites	Inhumation Burials	of which "poor"	
			No	%
Norfolk	13	991	938	95
Suffolk	10	685	315	46
Cambridgeshire	8	585	0	0
Essex	5	682	339	50
Lincolnshire	9	471	166	35
TOTAL	45	3414	1758	

Table 5.2: Quality of evidence from inhumation cemeteries for counties in the Eastern England dataset.

Despite the preservation issues, it is clear that at some inhumation cemeteries, animal remains are entirely absent. This contrasts to the cremation cemeteries, where in almost every cemetery with more than five cremations, animal remains have been recovered from at least one deposit. Sixteen cemeteries in the dataset contain more than five inhumation burials and have overall condition recorded as “good”, “acceptable” or “variable”, but do not contain any animal deposits. Of these, 13 are predominantly inhumation cemeteries. Several, including Swaffham Paddocks in Norfolk; Barrington, Cambridgeshire; and Kirkby La Thorpe, Lincolnshire have animal bone recorded from the cemetery but no deposits which fulfil the criteria for deliberate mortuary deposits. Other cemeteries, including Westfield Farm, Ely; and Quarrington, Lincolnshire, are recent, well-reported excavations with no animal bone recorded from the cemetery. Of the cemeteries dating to the 5th and 6th centuries, this includes some relatively substantial inhumation cemeteries of over 100 burials, including Barrington and Rayleigh, Essex. In no cases where the cemetery is very predominantly cremation (Spong Hill, Elsham, Cleatham, Illington, Field Dalling) have animal remains been found among the few inhumation burials. Inclusion of animal remains appears to have been therefore a minority practice in inhumation burials, which in some cemeteries was not practised at all, and which may have been incompatible with inhumation burials at cremation cemeteries.

In addition, there may have been a temporal aspect to the absence of animal bone. Only six inhumation cemeteries in the dataset are dated exclusively to the 7th and 8th centuries, but of these five contained no animal remains, and only in one case – Harford Farm – can this be ascribed to preservation conditions. The exception is Nazeingbury, with a late example of an amulet (see Sections 5.2.3 and 5.7). While this may indicate a dying-off of the practice in a period increasingly influenced by Christianity, it is also worth noting that examples are present from Buttermarket and Sutton Hoo, dated only slightly earlier. This is discussed further in Chapter 6.

5.1.1 Subsequent Structure

As has been emphasised already, it is not the case that all animals are equal. Different taxa each come with a unique suite of interactions with humans, and demand different skills and practices in their management, which in turn is likely to impact on their role in Anglo-Saxon cosmology and thence burial practices. Therefore, the first question to be answered is how each different taxon is used in burial practices in terms of their frequency, portioning, and attribution to different groups of people. In addition, the dataset has been further grouped in terms of the nature of the likely human-animal relationship in the 5th-7th century. Horses and dogs were the two taxa with the highest value as live animals and less value as dead animals – however, the roles they played were substantially different to each other, so each are discussed as individual categories. Cattle, sheep and pigs were the mainstay of life. Each taxon has different characteristics, but they play a similar role in constructing diet, so are considered together. Other animals – termed “Sundries” – are those which tended to play a more minor role in Anglo-Saxon life and crop up at the end of most zooarchaeological frequency tables, including domestic birds, wild birds and wild mammals. Curated bone, in all its multiple forms and from multiple different taxa, is discussed separately as it was transformed into a substantially different role. A final category, “Absent animals”, considers those animals which were present in Anglo-Saxon cosmology or physical landscape, but which are absent from mortuary deposits.

Table 5.3 shows the frequency of taxa in burials across Eastern England. The data from Spong Hill, which comprises the majority of the dataset, is displayed separately. In general, the pattern of taxon representation corresponds to what has already been described from previous work by Bond & Worley (2006). The most frequent inclusions are horses and domestic mammals, but a substantial range of other taxa are also represented. It is notable that only at Spong Hill are horses the single most frequent inclusion, with sheep overall most common from other cremation and inhumation deposits, and this is discussed further below. The range of taxa is also substantially greater from Spong Hill than from the remainder of the dataset, which can be explained as an effect of sample size, with the larger sample from Spong Hill more likely to contain rarer taxa than smaller samples from other sites.

The differences in taxon representation between settlement and burial assemblages have already been commented on (e.g. Crabtree 1995; Bond 1996; Bond & Worley 2006), with the most evident difference being the high frequency of horses in burial assemblages, which is not paralleled on settlement sites. More curiously, by NISP cattle are more abundant than sheep in settlement assemblages (Holmes 2014), while sheep are consistently more frequent than cattle in burial assemblages. In part, this can be attributed to different taphonomic processes which make the assemblages less comparable – higher fragmentation of large mammal bones will lead to increased NISP (Number of Identified Specimen) counts in settlement assemblages, while it will simultaneously result in lower identifiability and therefore reduced MNIs (Minimum Number of Individuals) in burial assemblages. However, taking a different angle, cattle are presumed to contribute the majority of the meat weight to an average early Anglo-Saxon diet (Hagen 2006: 390), whereas sheep were the animal sacrificed most often for burial rites, perhaps as a result of their much smaller size and therefore lesser loss and lesser commitment in terms of distribution of meat. The role of sheep and cattle in burial rites is discussed further below (Section 5.3).

	Spong Hill	Other cremation cemeteries	Inhumation
Horse	215	26	10
Sheep/goat	169	33	13
Cattle	69	14	2
Pig	81	9	4
Dog	19	3	2
Deer antler	10	3	
Deer other		3	
Chicken	5	2	6
Goose	2		2
Wild bird	4	1	1
Hare	1		
Bear	5		
Fox	5		
Beaver	1		
Amulet	22	4	2
Fish	1		
Bird	5	4	
Medium mammal	253	20	5
Large mammal	144	14	
Small mammal	5	3	

Table 5.3: Overall frequency of taxa included in burials in Eastern England.

5.2 Horses

The horse appears to possess a unique role in both inhumation and cremation rites in the Anglo-Saxon period. It is generally accepted to be the most common animal found in cremation burials (Bond 1994; Bond & Worley 2006), and horse / human co-burials are the most striking feature of the Anglo-Saxon inhumation burial record. The prevalence of horse in cemeteries is disproportionate to its prevalence in settlement contexts, where horse remains are regularly less frequent than cattle, sheep and pigs, and occur in similar numbers to dogs and chickens (Holmes 2014). However, horses can be considered an important animal in Anglo-Saxon life, enabling travel and certain kinds of hunting and warfare, but also requiring time, expense and effort to train and then maintain (Poole 2013a; Fern 2005). Along with their intelligence and ability to develop relationships with their handlers, horses are therefore perhaps peculiarly susceptible to having an ideological or cosmological weight placed upon them alongside a more mundane asset value.

Previous work on horses in mortuary context has identified cremation and inhumation as constituting two distinct practices (Fern 2007, Bond & Worley 2006), with different regional distributions and age and sex patternings. In brief, horses in cremations are present with large sections of the population, included with both men and women, most common with young and mature adults and less common with children or older adults, and include animals with draft pathologies, indicating a relatively poor quality of animal. Inclusion of horses in cremation burials is a practice largely confined to north Norfolk and Lincolnshire, an area corresponding to the Core Cremating Zone (Hills & Lucy 2013; Fern 2007); outlying examples are generally high status cremations (e.g. Asthall Barrow, Oxfordshire (Dickinson & Speake 1992) Sutton Hoo / Tranmer House, Snape). The practice is suggested to have been influenced by Continental and Scandinavian cremating practices, which include horses less frequently than other domestic animals, but to have developed in a uniquely insular manner whereby horses became the most common animal inclusion (Fern 2007). Horses in inhumations, by contrast, are much less common in individual cemeteries, usually present only with male warrior burials, and are typically large adult male animals suitable for riding. These inhumation burials are more widespread regionally, but are most common in the midlands (Fern 2007). The inhumation rite is considered to have been influenced by practices on the Continent, and reflects the development of a culture of elite equestrianism (Fern 2007).

Behind both of these substantially different rites, Fern has argued for the existence of a uniquely Anglo-Saxon mythology surrounding horses. The ideological importance of horses can be seen both in their funerary significance and in their regular occurrence in a variety of forms and mediums (particularly the paired horse motif and horse foot symbols) in art and decoration (Fern 2010). Later records from the 8th century onwards also emphasise a culture where horses with rich harness are important gifts given by lords to their followers (Fern 2011), although direct extrapolation back to earlier periods is problematic considering the substantial cultural changes occurring from the 8th century onwards (see Chapter 2). In one example, Bede records a story wherein Aidan, an early Christian bishop in Northumbria, is given a horse by the king, and then gives it away to the first person who needs it, in a direct subversion of conventions of gifting (Bede, *trans*. Sherley-Price 1990; Fern 2011). Similarly, Beowulf is gifted horses by Hrothgar as a reward for freeing his hall from Grendel (*trans.* Crossley-Holland 2002). Furthermore, one of the origin mythologies identifies the founders of Anglo-Saxon Kent as Hengist and Horsa (translated: stallion and horse), who in turn traced their descent back to Woden (Odin), placing them squarely in the category of mythological ancestors (Fern 2010). The possibility that horse meat was consumed, potentially under special or ritual circumstances, is also regularly highlighted, although little evidence exists either way (Poole 2013a). Horses, therefore, appear to have possessed a particular cosmological significance in Anglo-Saxon England, although it is somewhat unlikely this would have existed as a defined or single mythology, considering the diversity of cultures and beliefs subsumed within the label "early Anglo-Saxon England".

5.2.1 Cremation

The basic pattern of inclusion in cremations for horses – i.e. that they are the most frequent single taxon included, and that they are included primarily with adult individuals – is supported by the evidence from the Eastern England dataset. Some of the sites in the dataset have been included in previous studies and therefore informed these conclusions (e.g. Spong Hill; Tranmer House), but new data from Illington and Field Dalling also fits this suggested pattern. At both sites, horses are the most commonly identified single taxon, ahead of sheep. For Illington, where age data exists, horses are found only with adults or in one case with an individual described as "immature". All cremations containing horses are consistent with the animals having been included as complete animals. No information is available regarding pathology, size or age of the animals.

While horse is consistently the most frequently identified single *taxon,* this does not necessarily equate to the conclusion that horses were the most frequent inclusion with cremations. To take Illington as an example, horse occurred in ten cremations, compared to nine cremations with sheep remains. However, in both cases, some elements from the animal can only be identified to "large" or "medium" mammal. As described previously, where a specific taxon (horse) and a size category (large mammal) co-occur in the same cremation, it has been assumed that the large mammal elements derive from the horse. This leaves a certain number of instances where only large mammal or medium mammal could be identified in a cremation. At Illington, if sheep and unattributed medium mammal are combined, this gives 16 instances – equivalent to the number of cremations containing horse or unattributed large mammal. A similar pattern is visible in the much larger dataset from Spong Hill: horses and unattributed large mammal occur in 358 cremations, compared to sheep and unattributed medium mammal / "sheep-size", which occur in 394 instances. It can further be argued that horses, as animals which are typically cremated whole, are in fact more likely to be identified to species in cremations, due to the presence of easily-identifiable elements such as feet. Sheep and pigs, on the other hand, are regularly included as selected joints, including as joints from the thoracic area (ribs and vertebrae) which are not typically identified beyond “medium mammal”, and therefore sheep and pigs are disproportionately affected by not taking this material into account. Even in the cremation cemeteries where horse is most frequent, therefore, it is still likely that meat joints from sheep and pigs constituted a more common grave offering overall.

With regards to regionality, it appears that the regular inclusion of horses in cremation burials is indeed a pattern confined largely to the east of the country, from East Anglia to the Humber. Figure 5.2 shows the geographical distribution of cemeteries in which horse is the most frequently identified taxon. Without exception, horse is the most frequently identified taxon from cemeteries in Norfolk and Suffolk, and not the most frequent taxon from cemeteries falling outside this area. This is considered more reliable as a measure than absolute numbers or percentages of horses, considering the variability in size and condition of the dataset. The only site within these counties at which horse is not most frequent are Morningthorpe, Norfolk with very few cremations. The only cemetery in Lincolnshire from which data is currently available is Baston, an old assessment where only “large mammal” remains were identified, making the situation here uncertain, although since this is part of the Core Cremation Zone, and

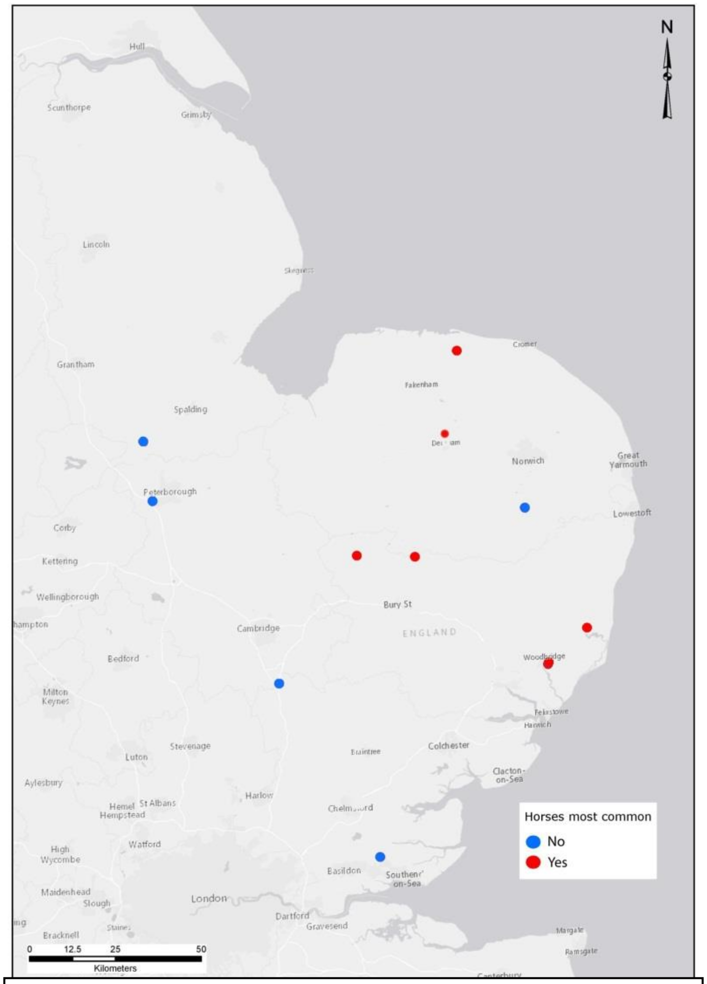


Figure 5.2: Geographical distribution of cremation cemeteries at which horse is the most common inclusion (marked in red) in Eastern England.

since Sancton – just across the Humber in Yorkshire – also contains horse as the most common inclusion, it is possible that this pattern extends throughout Lincolnshire. It is unlikely that county boundaries are followed precisely – Millgate, in Nottinghamshire, has horse reported from 14 cremations (compared to 26 instances of sheep), but the analysis is relatively old and bears similarities to Illington, and it is possible that horse is distinctly under-identified here. Similarly, a few instances of horses have been reported from cremations at Little Wilbraham in Cambridgeshire, but again this is taken from a report dated to 1852 (Neville 1852) and under-representation is likely. Additionally, the two largest cemeteries in Essex – Mucking and Rayleigh – have suffered severe disturbance and minimal information is available from these assemblages. However, horse is clearly present at Snape, and more frequently identified than other taxa, despite significant disturbance to these cremations.

While it is difficult to define any firm boundaries, owing to the condition of material and relative scarcity of information, it seems apparent that the smaller, mixed-rite cemeteries outside of the eastern area contain horse with far less frequency than the cemeteries within this area. Neither Great Chesterford nor Minerva in fact contain any positively identified horse at all, instead yielding only meat animals – sheep, pig, cow and chicken. While this is an admittedly small dataset on which to base conclusions, a similar pattern has been noted from cemeteries further afield (St Mary's Stadium, Hampshire (McKinley 2005); Butler's Field, Gloucestershire (Boyle et al. 1998)), and also from a recent survey of cremations in the midlands (Warwickshire, Oxfordshire, Leicestershire and Rutlands), where sheep/goat is typically the most commonly identified species, with horse identified only at Bidford-on-Avon (McCullough-French 2017). Broadly speaking, the high-horse prevalence cemeteries tend also to have the highest overall prevalence of animal inclusions, suggesting these areas may be marked by distinct funerary practices.

Table 5.4 shows the frequency with which horses occur with different taxa in cremation cemeteries. Overall, horses are as common in single-animal cremations as they are in multiple animal cremations. At Tranmer House and

Lakenheath, horses are only found as part of multiple animal cremations, although this is most likely because the frequency of multiple animal cremation is very high at both of these sites, albeit for different reasons. At Spong Hill, horses occur most often singly, but when they occur with another animal this is most often sheep (including sheep-size), a pattern which is reflected in the inhumation burials (see below). However, at the other cemeteries, there is a more even distribution with cows and medium mammals generally most common. Broadly speaking, the frequency with which other animals occur with horses tracks the frequency with which they occur in cremations in general: meat offerings (sheep, cow or pig) are most common, and birds, wild taxa, and dogs occur occasionally. At Spong Hill, horses, along with cows and dogs, are slightly more common in multiple animal burials than they are in single animal burials, while sheep and pigs (the medium mammal meat offerings) are more common as a single offering. While horse and meat offering are therefore the most common combination, the two afford several choices in the cremation construction: whether to include just a horse; a horse plus meat; or just meat. As noted above, age appears to be an important consideration in structuring these choices, and

	Spong Hill	Field Dalling	Illington	Snape	Lakenheath	Tranmer House	Sutton Hoo
Single	104	1	7	1			1
Multiple	111	3	4		4	4	2
Sheep	22	1			2	3	1
Pig	15		1		1	1	1
Medium mammal	58	1	2		1	1	
Cattle	30	1	3			4	1
Dog	5				1		1
Bird	3					1	
Wild Animal	2						
Amulet	4				1		1

Table 5.4: Frequency of occurrence of horses with other taxa in cremation burials. "Single" indicates cremation contains only horse; "Multiple" indicates multiple taxa.

wealth can also be expected to be a contributing factor, although neither of these may be sufficient to explain the range of variation seen. Fern has suggested that the inclusion of horses as the most frequent animal in cremations is a development associated not with the earliest phase of cremation practice, but from a slightly later point (Fern 2007). This would corroborate the theory that this practice was developed in England, rather than having been directly imported from a foreign homeland. Using the recent phasing at Spong Hill (Hills & Lucy 2013; Table 5.5), several patterns can be noted (Table 5.6). Firstly, horses are not the most common identified taxon in phase A – sheep are more common, with 37 instances compared to 30 for horse. The phases where horses are decidedly most common are A/B and B. Phase B appears quite distinct from Phase A – it comprises the most cremations containing animal bone, and appears to represent an elaboration of the patterns seen in Phase A. The proportion of cremations with animals which contain horses jumps from 18% in phase A to 38% in Phase B. However, more horses are present as single offerings than in multiple offerings in Phase B, although the numbers are nearly equivalent; compared to a majority in multiple animal cremations in Phase A (19 multiple against 11 single). What these patterns appear to suggest is that the importance of the horse increased between Phase A and Phase B at Spong Hill, so that in Phase B, horses were included with more people overall and more often were the offering chosen when only a single offering was made. The numbers in Phase C are much smaller, but seem to indicate a return to the patterns in Phase A, where horses are less common than sheep and mostly included where multiple animals are being offered. Broadly speaking, this would support the theory that this is a developing practice. However, it should be noted that the trends are slight, and the similarities in each phase are perhaps more significant than the differences. In the earliest phase at Spong Hill, horse was already a frequent offering.

Phase	Date	Total Burials
A	*c.425-450AD*	472
A/B		354
B	*c.450-500AD*	816
B/C		60
C	*c.500-530AD*	235

Table 5.5: Phasing at Spong Hill. After Hills & Lucy (2013).

Phase	Crems with animals	Horses		Sheep		Pig		Cattle		Dog		Deer	
		N	%	N	%	N	%	N	%	N	%	N	%
A	167	30	18	37	22	16	10	19	11	2	1	2	1
A/B	132	34	26	22	17	14	11	6	5	2	2	1	1
B	267	101	38	68	25	33	12	27	10	11	4	3	1
B/C	19	6	32	5	26	1	5	1	5				
C	46	8	17	10	22	3	6	4	9	1	2		
?	123	30	24	25	20	12	10	8	6	1	1	1	1

Table 5.6: Frequency of inclusion of major taxa by phase in cremations at Spong Hill.

While horse cremation in the large urnfields is largely confined to the mid-5th to mid-6th centuries, from the mid-6th century, there are a few examples of horse inclusion in cremations which are clearly high status (barrow or bronze vessel) (Fern 2007). Within East Anglia, these include burials at Sutton Hoo and Tranmer House, but this is a practice which is also used outside of the eastern England area, primarily at Asthall Barrow, Oxfordshire, an isolated barrow burial containing a single cremation of a probable man with horse and sheep (Fern 2007; Dickinson & Speake 1992). In these burials, elements of an older rite – cremation with horse sacrifice – are being used in conjunction with new expressions of high status, such as the barrow. It seems possible that these later, high-status burials are referencing deliberately an earlier practice and the significance of the horse as a means of demonstrating and legitimating power.

The features of horse cremation, therefore, appear to be that it is a common practice associated with many adult members of the community afforded burial in large, single-rite cremation cemeteries in the east of England. The practice does not appear to endure beyond the point where cremation ceases to be a majority rite, excepting some later instances within high status burials, which may have been partially influenced by the inhumation rite associated with male warriors (see below). Evidence from later written sources and from contemporary artwork has been used to argue for the central importance of horses to Anglo-Saxon cosmologies (Fern 2010, 2011), and the over-abundance of horses in cremation rites would appear to indicate something similar. The lack of a clear antecedent either from the “origin” areas of Europe or from within Britain (Fern 2007), and its clear importance within a specific region which was heavily affected by migration (Dark 2000), suggest that this is a practice and a cosmology which developed in situ to meet the needs of a changing community and situation. Both in Britain and on the Continent, horses have had a long history since the pre-Roman Iron Age of cosmological significance in varying forms. Specific examples that can be highlighted are the depiction of the horse on coins in the British Iron Age (Creighton 2000) and the Roman culture of equestrianism and regular depiction of mounted figures (Fern 2010, 2011). Another example of “horse culture” introduced into Britain during this period is that of the cremation cemetery at Brougham Fort, Cumbria, where horses were included regularly in adult male and female cremations (Bond & Worley 2004; McKinley 2004b). This is thought to be a practice of the introduced community of Pannonian mercenaries, associated with the fort in the 3rd century AD (Cool 2004:464-466). While none of these practices can be considered direct antecedents or sources for the Anglo-Saxon rite, the idea of the horse was perhaps still in the air both on the Continent and in post-Roman Britain, and serious consideration should be given to the idea that this practice could have been as much syncretic as introduced by a diaspora community.

5.2.2 Inhumations

As discussed above, inhumations with horses have been extensively studied. The dataset available here is, with the exception of two currently unpublished horse inhumations from recent excavations at Oakington, identical to that used by Fern (2007), which is in turn derived in large part from Vierck (1970/1). There is an apparent lack of horse inhumations in eastern Britain, particularly Norfolk and Lincolnshire, compared to more plentiful remains in the south and the midlands (Fern 2007). It is arguable that this could be partly attributed to the aggressive soil conditions across much of this area rather than representing a genuine regional pattern. The total number of horse burials from the entire region surveyed comprises only nine examples included in the dataset, plus a further three examples excavated by antiquarians and included by Fern (2007). Additionally, two examples of horse burials associated with cemeteries dating to the eighth century – at Sedgeford and Brandon – are not included in this dataset, but are discussed further below. Curated examples of horse teeth from Nazeingbury and Castle Bytham are also excluded here, and discussed in Section 5.7.

Table 5.7 shows all the horses from the dataset with the details of the burial. All the horses which could be sexed are male. Although all horses are fully mature, the age range is substantial, with the youngest animal from Great Chesterford only 2 years old, and the horse head from Snape positively elderly, estimated to be 20-30 years of age. Horses occur for the most part as complete animals, except for two examples of detached horse heads (Snape, Springfield Lyons) and, conversely, one of the Oakington horses which is clearly missing its head.

In all cases where horses are associated with human graves, they are found with young / mature men, reflecting the patterns seen across England and on the Continent. In three of the five cases from the eastern England dataset, the burial also contains a second animal. In two cases (Sutton Hoo and Lakenheath) this is clearly a meat offering, with one or more portions of sheep present; at Snape, the presence of another animal is attested only by a sand-stain, which appears to correspond to a medium-sized mammal. Fern (2007) has suggested sheep to be the most common accompanying deposit within horse burials in England, although it is recorded in only a few cases, mostly recent. The combination of a meat offering and a complete horse strongly recalls cremation practice, and it is possible this practice was more widespread than is currently recognised.

Site	Animal	Part	Age	Sex	Size	Location	Comments
Springfield Lyons	Horse	cranium	unk	unk		in pit	harnessed
Great Chesterford	Horse	whole	2 years	m		alone	burnt harness
Great Chesterford	Horse	whole	5-6 years	m	14 hands	with male burial	
Lakenheath	Horse	whole	9 years			with male burial	
Lakenheath	Horse	whole	5 years	m		with male burial	
Oakington	Horse	left side, without head	5 years		12-13 hands	alone	
Oakington	Horse	whole	< 5 years	m	13-14 hands	alone	
Snape	Horse	cranium	20-30 years	m		with ship burial	harnessed
Sutton Hoo	Horse	whole	5-6 years	m	14 hands	with male burial	

Table 5.7: Horses from inhumation burials and cemeteries in Eastern England.

In four out of the nine cases, the horse in question does not appear to represent a co-burial with a human. Horses are one of only two taxa to occur as unassociated deposits in cemeteries, the other being dogs (Section 5.4) – another species capable of developing close emotional relationships with humans. Only one of these unassociated burials, from Oakington, appears to be a traditional complete horse, with the others including a single horse head (Springfield Lyons), an apparently decapitated horse (Oakington) and a complete horse burial with its harness placed in the grave to the rear of the animal and burnt *in situ* (Great Chesterford). Fern (2007) records a trend – which can be seen in the other examples – for horse burials in the latter part of the period to be placed in separate but adjacent graves to their humans, such as at Sutton Hoo (mound 17), and it may be possible to argue that these unassociated horses are in fact an extension of this practice. However, the evidence of decapitation and the currently unique example of horse harness being burnt at Great Chesterford suggests a more atypical pathway for these burials, since these are significant and memorable acts. Decapitation, even of a dead horse, is clearly dramatic; and the burning of horse harness – an important symbol of equestrianism and an investment of materials – was also an act with a distinct purpose and meaning. At Great Chesterford, the burial can be read as a deliberate variation on the symbolism of the typical horse burial with harness rite. The destruction of both horse and harness suggests a rite directed towards the “closing” of a riding animal, and the drama of the action may suggest adverse or traumatic circumstances, associated either with the horse itself or with the rider. While it is difficult to ascertain the precise purpose of these actions, they are notable for being actions involving the sacrifice of animals within a cemetery which are not directly associated with the creation of a grave tableau.

A further example can possibly be added from the mid-6th century barrow cemetery at Sporle-with-Palgrave, Norfolk (Ashley & Penn 2012). This was excavated in the early 19th century, so should be treated with some caution, but records show clearly one barrow containing six or seven bodies, and an adjacent barrow recorded as “containing the bones of horses” (Ashley & Penn 2012). This appears to represent a different situation to the other examples, where instead of being strictly unassociated, the Sporle-with-Palgrave horse burial (which may have included multiple horses) is possibly associated with multiple people. However, the recording is insufficient to tell whether all the human burials were contemporaneous or whether some or all were secondary inhumations placed into a pre-existing barrow, and how the horse burial related to the other inhumations (Ashley & Penn 2012), meaning interpretation of this very peculiar deposit is difficult.

Inhumation burial with horses, then, appears to be a practice which is widespread regionally and strongly linked to male weapon burials. Horse burials differ substantially from most other inhumation practices involving animal deposits, which tend to show regional or even local patterning in terms of animals selected and age / sex associations, indicating that this was driven by a more particular and widely held underlying belief. It is clearly influenced by similar traditions in Continental Europe and southern Scandinavia, which are argued to be associated with a developing culture of elite equestrianism (Fern 2007). In these regions there are many more examples of horse burials, and examples as well of richer burials including multiple horses, which are not known from England, unless in the example of Sporle-with-Palgrave, mentioned above (Müller-Wille 1970/1; Fern 2007), suggesting that Britain is perhaps an outpost on the edge of this culture. However, examples of horse sacrifices unassociated with grave tableaux also display an ability to adapt these practices to fit circumstances and potentially a continuing, underlying significance of horses beyond markers of wealth and power.

5.2.3 Later traditions

Most mortuary ritual involving animals is thought to cease with the re-introduction of Christianity, by the end of the 7th century (Chapter 2). However, there are a number of possible later examples of inclusion of horses in later mortuary ritual. A single horse tooth, interpreted as a pendant, was found from the grave of an adult woman in Nazeingbury, Essex. The cemetery was associated with a building and shows features which may be associated with Christian belief (shroud burial, lack of grave goods, east-west orientation) and has been interpreted as belonging to a nunnery or hospice (Huggins 1978). The cemetery is dated with a lifespan between the 7th and 9th centuries, and while this particular burial is not dated any more precisely than this, its position in the stratigraphy indicates it is a relatively late burial. One other perforated horse tooth amulet is known from Castle Bytham, Lincolnshire (Meaney 1981), undated but presumably earlier, and this shows other signs of working, indicating it was probably a games piece which has subsequently been reused. There are no current direct parallels for the pendant from Nazeingbury, but the continuing social importance of horses makes it likely that the tooth had some significance as an amulet or other token.

While a tooth pendant is a fairly compact and private affair, other later rites involving horses may have been much more visible, requiring community co-operation. The cemetery at Sedgeford, Norfolk is dated to the 8th-9th century, and again shows typical features associated with Christianity, including shroud burial and absence of grave goods. However, the cemetery also contains a contemporary possible co-burial of human and horse (Cross 2011). This is unusual, both for the fact that the person buried with the horse is female and has no other grave goods, and secondly for the arrangement of the person at right angles to the horse, lying with the human head on the horse's pelvis. Radiocarbon dates from the horse confirm that the animal is contemporary with the cemetery, although unfortunately samples taken from the associated human failed to yield dates (Cross 2011). However, the cemetery is located adjacent to a contemporary Anglo-Saxon settlement, and contains a substantial quantity of animal bone in fills and soils which is considered to be residual material which has drifted downslope from the settlement. One alternative scenario is that the horse was a natural death associated with the settlement, which was then disposed of at the edge of the cemetery, and the female burial was a later interment which happened to cut this grave. Another, similar possibility is that the horse is a deliberate individual interment within the cemetery, similar to those seen at Oakington. Unfortunately the contextual information for the site is insufficient to determine the precise relationship between the human and horse burials, although this is generally considered a genuine and unique co-burial (Cross 2011).

One further intriguing deposit comes from the 8th century cemetery at Brandon, Suffolk, where a horse head was found from a door pit leading to the chancel of a church (Crabtree & Campana 2014). While technically a foundation deposit rather than a mortuary deposit, this suggests a continuing cosmological value to the horse which persists in some places into the Christian era and is absorbed to an extent into Anglo-Saxon Christianity. The placing of a horse head as a foundation deposit is also a matter of public rather than private ritual, suggesting that at least a proportion of the community would have been aware of and involved in the ritual. This has some resonances with a much later tradition, which persisted as late as the 19th century and involved the placing of horse crania under floors (usually hearths or thresholds) of houses and churches, and in Scandinavia under threshing floors (Merrifield 1987; Sandklef 1949; O'Suilleabhain 1945). These are explained in oral tradition either as devices to improve the acoustic quality of the floors, or as a custom to bring luck or to keep away evil. While the earliest example which can likely be attributed to this tradition is from Thuxton, Norfolk, where four horse skulls were found beneath the threshold of a 14th century building (Merrifield 1987), the practice is widespread across England and is maybe best-known from Ireland (O'Suilleabhain 1945). Most examples are much later in date than Thuxton, with most of the English examples dated between the 17th and 19th centuries (Merrifield 1987). These therefore cannot be linked directly to earlier traditions of horse decapitation or the slight evidence for foundation rituals involving horses in the Anglo-Saxon period. Viewed in a different light, the burial of horse skulls is only one strand within a broad, complex and enduring tradition of foundation rituals, many of which involve animals; and any attempt to elucidate the history and development of these deposits should also consider their place within this broader context. The topic of later foundation ritual and its link to traditional beliefs in the Christian period is substantial, and substantially beyond the remit of this thesis to address. However, these few examples serve as a salutary reminder than animals even as substantial as horses could still be incorporated into community rites after the advent of Christianity. This is discussed further in Chapter 6.

5.3 Cattle, Sheep, Goats and Pigs

This section deals specifically with the four major farmyard domesticates – sheep, goats, cattle and pigs. The remains of these animals, in differing proportions, form the bulk of all assemblages recovered from Anglo-Saxon settlements (Holmes 2014), and would have provided the bulk of the animal protein in the diet, either via meat or secondary dairying products (Banham 2004; Hagen 2006), with all the social and community problems this presents in terms of slaughtering and disposing of a large amount of meat (Robb 2007). They may also be, along with horses, some of the most time-intensive domesticates in terms of management and husbandry, and their needs would have helped to define daily and annual cycles. They are some of the most regularly included offerings in cemeteries of all periods (e.g. Philpott 1991), but their presence in Anglo-Saxon cemeteries has been little discussed.

As discussed previously, due to the dominance of sheep in Anglo-Saxon assemblages and the difficulty of distinguishing sheep from goats, particularly in cremated material, all sheep/goat remains are described as "sheep" unless they can be positively identified to goat.

5.3.1 Inhumation cemeteries

While the overall prevalence is still very low, domestic animals are the most common deposits in inhumation cemeteries in the eastern England dataset. Sheep are the most common single taxon, present in 13 graves (compared to 10 horse graves from the same dataset) (see Table 5.3, above). An additional 5 separate graves contain bone identified only to medium mammal. The majority of sheep deposits derive from Lakenheath (8 out of 13) and Castledyke South (3 graves). Since these are the largest and best-preserved inhumation cemeteries in the dataset, this is perhaps a matter of probability, although there are distinct differences in taxon representation between the two cemeteries, with sheep apparently much more numerous at Lakenheath (see Chapter 6). Pigs and cattle are both substantially less frequent, with only three graves recorded as containing pig bone across three different cemeteries, and only two definite instances of cattle. The lack of cattle can potentially be partly attributed to the difficulties outlined earlier in identifying definite cattle deposits (see Chapter 3).

Data from this dataset can be compared to collated information from other summaries – Wilson (1991), Lucy (2000), Meaney (1981) and Fern (2007) – which mention a number of domestic animal bones in inhumation cemeteries and include both antiquarian records and cemeteries from other areas of the country. This dataset should be considered indicative rather than systematic or comprehensive, and the data has again only been included if it fits the criteria outlined in Chapter 4. It is notable in this dataset that the taxon representation is very different, with cattle most common (9 graves), followed by sheep (5 graves) and pig (1 grave) (Table 5.8). Two reasons can be suggested for this. Firstly, this could be indicating differences between eastern England and the rest of the country, although since the sites mentioned are well-scattered across southern, western and northern England, and considering the probable cultural differences between these areas, this seems unlikely. What is perhaps more possible is that a number of these sites are early excavations where systematic collection of animal bones was not necessarily employed. Where substantial collection biases exist, the bones of larger mammals such as cattle tend to be over-represented compared to smaller mammals such as sheep. However, this dataset does also highlight the probability that local practices at some cemeteries outside of eastern England employed cattle more regularly than the cemeteries included in the eastern England dataset.

	Eastern England	Secondary Data
Cattle	2	9
Sheep	13	5
Pig	4	1

Table 5.8: Frequency of cattle, sheep and pig inclusions in inhumation burials in Eastern England vs. secondary sources, excluding curated bones.

Unlike horses, domestic animals occur only in graves with humans (rather than singly), and typically as disarticulated joints. The domestic animals in graves are limited to a single taxon per grave, with the exception of several instances where sheep or medium mammal remains are included with horses (Lakenheath; Sutton Hoo; Snape). Grave 4 at Castledyke South is recorded as containing elements from both pig (tibia) and sheep (foreleg) – both of these appear to be deliberate depositions associated with the body, although dog gnawing was recorded on one of the sheep elements, putting this somewhat into question. However, while graves are typically limited to a single taxon, in a number of instances it is clear that several separate joints from the same animal have been included in the grave. At Buttermarket (grave 2365), the forelimbs, hindlimbs and cranium from a pig were included in the grave of a probable male adult. The location of the bones within the grave shows clearly that the carcass had been jointed, with the limbs placed in the area of the pelvis and upper legs, and the cranium at the foot of the grave. At Lakenheath, three out of the eight graves containing sheep contained multiple portions of the animal, from different areas of the animal including torso (ribs), cranium and limbs (see Table 5.8). Grave 296 is particularly interesting, as this appears to contain remains from sheep of two different ages, with the maxilla and mandible indicating an age discrepancy of approximately a year (O'Connor unpub.). At Castledyke South, there is no clear evidence for multiple portioning, but instead the portions of sheep offered tend to be substantial, consisting of forequarters (forelimb & ribs) or an entire back end (both hindlimbs and pelvis) (Table 5.9). There is no evidence to indicate whether or not these were subdivided before being placed in the grave.

Unlike the medium-sized pigs and sheep, there is no evidence for multiple portions of cattle being placed into graves. However, this practice could go some way towards explaining the peculiar and thus far unique deposit of a complete cow in the grave of a young adult female at Oakington (Nottingham 2015). Knife marks on the right metacarpal and the absence of any caudal

Site	Animal	Location
Castledyke South	Sheep	with female burial
Castledyke South	Sheep	with female burial
Castledyke South	Sheep	with juvenile burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with elderly female burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with male burial
Lakenheath	Sheep	with male burial

Table 5.9: Sheep included in inhumations from Castledyke South and Lakenheath.

vertebrae suggest that the animal was skinned, and the excavators have argued that this may highlight the associations of food and consumption, in effect turning the cow into an extra-large meat deposit (Morris pers. comm. Sept. 2014). However, currently the uniqueness of this deposit makes explanation difficult, and it is possible that this was a response to specific circumstances.

The presentation of cattle, sheep and pigs as disarticulated joints strongly suggests that these animals bear a primary meaning of food offerings in graves. In this, they are part of a range of foodstuffs which were placed in graves, including eggs, fruit, nuts and oysters (Lucy 2000: 92-93). Crania, either complete or bisected, were included regularly, and should probably be viewed as another meat portion. Unlike offerings from the Roman period, these meat offerings do not appear to be presented as food on plates, and the quantities included suggest these may have been resources rather than meals. At Sutton Hoo a portion of sheep ribs appear to have been placed in the grave in a leather bag (Mound 17), perhaps indicating a symbol of journeying, but this is so far exceptional. At both Great Chesterford and Caistor-by-Norwich, graves have been reported that contain fragments of animal bone within pots, which may suggest presentation of food within a container. However, at neither of these sites have the fragments been identified. Great Chesterford, as discussed in Chapter 3, has substantial quantities of residual bone in fills; and the quality of excavation and data collection at Caistor-by-Norwich is uncertain, not least because the physical archive is no longer available. It is therefore difficult to be certain what the pots in question genuinely contained.

The vast majority of the domestic animal deposits in the eastern England dataset occur with adult inhumations. There appears to be no overall sex patterning, with all three taxa included in both male and female burials. Of the cemeteries included in the eastern England dataset, only Lakenheath and Castledyke South comprise sufficient deposits of domestic animals to consider intra-site age and sex patterning. These sites show strong but opposite patterns. At Castledyke South, the three deposits of sheep and pig bones occur with two adult females and one child of 7-8 years old; while at Lakenheath, of the nine graves that contained cattle or sheep deposits, eight were of adult or adolescent males. The remaining deposit from Lakenheath was included with an elderly female. In both cemeteries the age and sex patterning for domestic animals corresponds to that for other “meat” animals (predominantly chickens), and in both cemeteries the joints included are varied, with no particular side or part of animal especially favoured. This suggests that in terms of age and sex, what matters is the presence of a meat portion, rather than of what the meat portion consisted; and that the age and sex categories which qualified for meat portions placed in the grave are highly localised. The dataset is unfortunately too sparse to judge whether the age and sex patterns seen are regional or local to specific cemeteries. It is notable that deposits from cemeteries in Suffolk are predominantly associated with adult males, while those from Cambridgeshire (Gunthorpe, Melbourn and Oakington) are included with both males and females (Table 5.10), a pattern which appears to be statistically significant (chi-square test, $p<0.05$). However, the extremely low overall prevalence of the deposits, particularly in Cambridgeshire, should be recalled. Regardless of age or sex, this was a rite afforded only to a very small proportion of the community.

	Male	Female
Suffolk	13	1
Cambs	2	2

Table 5.10: Numbers of animal inclusions in male and female inhumation burials in Suffolk and Cambridgeshire.

5.3.2 Cremation

After horses, cattle, sheep and pigs are the most common taxa found in cremations in the east of the country. Unlike horses, they are also present in cremation cemeteries outside of eastern England and the Core Cremation Zone. Table 5.11 shows the number of sheep, cattle and pigs at cremation cemeteries in the dataset, with the number of horses given as a comparison. As in the inhumations, sheep are typically the most common single taxon, with pigs and cattle represented in varying quantities at different cemeteries. The same appears to be true for cemeteries outside of eastern England, with the possible exceptions of St Mary's Stadium, Hampshire, where pigs are slightly more frequent than sheep; and Mucking, where cows are most common, although the data from Mucking are of uncertain quality (Chapter 4). However, the numbers of cremations available from cemeteries outside of Norfolk and Suffolk are very low, and caution should therefore be taken when drawing conclusions.

SITE	Horse	Cow	Sheep	Pig
Spong Hill	215	69	169	81
Illington	11	6	10	3
Field Dalling	4	2	3	1
Tranmer	4	4	4	1
Sutton Hoo	3	1	2	2
Lakenheath	4		3	1
Great Chesterford			2	
Morningthorpe		1	1	
Minerva			2	1
Rayleigh		1	4	
Mucking		3	2	1
Snape	1			

Table 5.11: Frequency of major domesticates from cremation cemeteries in Eastern England.

Within Norfolk and Suffolk, the cemeteries of Sutton Hoo and its precursor Tranmer House stand out in terms of domestic animal representation. Tranmer House is atypical, as cows occur in as many cremations as sheep and horses; while at Sutton Hoo, pigs are as frequent in cremations as sheep. Both of these sites are considered high status, and both have a high prevalence of animals in cremations and particularly a high prevalence of multiple animal cremations. At Tranmer, the regular inclusion of cattle in burials which also contain horses can be seen as a demonstration of wealth in the community, as cattle are a much more substantial animal to sacrifice for mortuary purposes than the medium-sized sheep or pigs (Bond & Mustchin 2015). The cremations at Sutton Hoo do not appear to use a similar structure, as only one extremely wealthy cremation contains cow, along with another four taxa. Instead, horses and multiple portions of sheep and pig appear to be more important, with one cremation containing one sheep and at least two pigs.

		Horse	Sheep	Pig	Cattle	Medium mammal
Spong Hill	Multiple	111	62	39	48	81
	Single	104	107	42	21	144
Field Dalling	Multiple	3	2	1	2	3
	Single	1	4			5
Illington	Multiple	4	2	1	3	3
	Single	7	8	2	3	3

Table 5.12: Frequency of inclusion of horse, sheep, pig and cattle in multiple animal and single animal cremations from Spong Hill, Field Dalling and Illington.

Table 5.12 shows a comparison from Field Dalling, Illington and Spong Hill of how frequently cattle, sheep and pigs are included in cremations with other animals. At all three sites, cattle occur as often or more often in cremations with other animals (multiple cremations), while sheep and pigs occur most often singly (single cremations). It is possible that the different size of the animals has created different taphonomic biases which are contributing to this. Larger animals may be harder to identify to species, as the larger elements tend to suffer greater fragmentation, and therefore there is a lower rate of identification to taxon per fragment than with medium-sized mammals. Weight of cremation has been shown to affect the frequency with which taxa can be identified (see Chapter 3), and Table 5.13 shows that cremations containing single taxa from Spong Hill are on average slightly over half the weight of those containing two or more taxa. It is possible, then, that cattle are underidentified from underweight single cremations. However, assuming the pattern is not entirely taphonomic, this highlights the fact that cattle are used distinctly from sheep and pigs, in accordance with their size, and tend to be included in "richer" cremations where one or more animals have already been afforded. Where only one animal is afforded in a cremation, this tends either to be a horse or a smaller meat animal, such as a sheep or a pig.

	Multiple Animals	Single Animal
average weight	1013.25	637.86

Table 5.13: Average weight of cremations containing one animal vs. multiple animals from Spong Hill, Norfolk.

The age profile of animals is difficult to reconstruct from cremations, but it appears clear that the majority of sheep, cattle and pigs were adult animals slaughtered at a similar age to that which is normal from settlements (see Bond 1994). Unlike other animals included in cremations, however, there are a few examples of neonatal cattle and pig included in cremations. These are mostly from Spong Hill (5 piglets, 4 calves), but one piglet was also recovered from the cremation of an adult at Illington. Three of the piglets are the only offering presented in the cremation – one with an adult, one with an adolescent/adult, and one with an older infant. All of the other calves and piglets are part of multiple cremation offerings, and are included in adult cremations. Only one of these (crem 2486, calf) is included with a horse; the remainder are included with some form of medium mammal, and cremation 1496 (piglet) also included antler. These are considered to be suckling animals, which would have been consumed as part of diet (Bond 1994). In the case of calves, it appears again that these were the most valuable offering, as they were included only in multiple cremations and only with adults – a value perhaps related to their sacrificed future value as much as their current worth. It is worth noting that these offerings are very infrequent, which could at least partially be due to availability issues. Unlike sheep, there is no particular season for calving or farrowing in pigs and cattle, and for a neonate to be included requires the death and mortuary rites to be coincident with a member of the community having access to a young calf or piglet. It is possibly also for this reason that the age representation in cremations is in general slightly broader than settlement sites and does not clearly fit age profile – the season of death is unpredictable, and a degree of opportunism in the animals represented is to be expected (Bond 1994).

The relationship between domestic animals and the biological identity of the human in the cremation has tended to be slight when considered at the taxon level. Cattle, sheep and pigs are present with both sexes and in cremations of all ages. The vast majority of these animal deposits are with adolescents or adults, with only a few included with infant or juvenile cremations, although sheep and pigs are some of the most common deposits to be included with infant and juvenile cremations. In terms of sex, at Spong Hill (from whence most of the data derives) the only trend of specific note is that pigs tended to occur more often with females than males (Hills & Lucy 2013). However, there appear to be no strong associations between any of the taxa and any specific age or sex pattern, and broadly speaking, cattle, sheep and pigs show similar unspecific patterning relative to biological identity. One of the reasons for this may be that domestic taxa are commonly present in multiple animal deposits, and conflating cremations containing only sheep with those containing sheep and several other animals may easily have the effect of obscuring more subtle identity patterns. This is returned to in Chapter 6.

5.3.3 Multiple Portioning

One critical question, considering the evidence from the inhumations, is how much and what portions of cattle, sheep and pigs were placed into cremations. In particular, the question is whether, as in the inhumations, there are multiple portions of the same animal placed into cremations. A further question is whether the portion(s) provided reflects either identity or mortuary beliefs. Different cultures will place different values on parts of an animal carcass, and portioning and redistribution of an animal may be used as a signifier and reinforcement of identity (Sykes 2014: 10-11). McCormick (2002) cites examples from early medieval Irish records to describe how a sheep is divided among the retainers in a household, and who is entitled to which portion of the carcass. Similarly, across the medieval period, meat from hunted deer was redistributed in a formalised way and according to hierarchical relationships (Sykes 2010; 2014: 157-162). In Roman and Greek classical belief, there are multiple examples where right-hand side portions are provided for “heavenly” deities and left-hand side portions are associated with underworld deities, a structure which can be seen reflected in sacrifices (MacKinnon 2010). Similarly, in an ethnographic example from Ghana, Goody records how a cow is provided and sacrificed as part of funerary rites, and then divided up between the participants in the funeral, with different groups entitled to different parts of the animal (Goody 1962; see Table 5.14). It is therefore possible, considering the weak identity structuring reflected in the domestic animals by taxon, that identity is indicated more strongly via the portions provided.

Based on the evidence from Spong Hill, it has been argued already that cattle, sheep and pigs occur both as whole animals and as individual butchered portions (Bond 1994). A cremation containing a single portion can be defined as containing elements only from one body area on one side of the body (e.g. 1 right foreleg; see Chapter 4). Using this definition, almost half of the cremations at Spong Hill which contained sheep only contained a single portion of the animal, and similar for cattle. Pigs are included by far most often as a single portion. Similarly, those cremations containing elements identified only as medium mammal are single portions more than 90% of the time. This is partly due to identifiability, and partly because portions of ribs are among the most common single portion of medium mammals placed with cremations (see below).

Portion	Recipient
Right front leg with skin	Friends of the deceased's matriclan
Left front leg	Persons whose fathers belonged to the matriclan of the dead man
Rear leg	Matriclan of the deceased's father
Rear leg	Deceased's matriclan
Fillet	Mother, or a female member of the same matrilineage
Nape of neck	Widows
Head, entrails, half liver, half kidney, half windpipe, lungs, stomach	Used for preparing the orphans meal
Front 3 ribs	To those who cut up the meat
Hide	For the repair of the treetrunk drum
Lower jaw, chest, half windpipe, half liver, half kidney, udder, heart, inside belly, stub of tail, tip of ear, small portions cut from back legs	To the owner of the xylophones

Table 5.13: Division of a sacrificed cow between mourners at a funeral within the LoWiili & LoDagaba communities, Northern Ghana. After Goody (1962: 174).

Whole animals are only defined as such when more than four different body areas of the animal are present in the cremation, and it appears unequivocal that the whole animal was present. The majority of horses are considered to be whole animals (66%) – the remaining third probably representing the effects of poor collection or taphonomy. By contrast, very few sheep, pigs or cattle could be defined as "whole". Instead, a large proportion of cattle, sheep and pigs are represented by scattered elements from two to four areas of the body – insufficient to comprise a whole animal, and non-contiguous, so it is clear that they represent more than a single portion.

The question is then, do these “scattered” deposits represent multiple portions which have been placed onto the pyre, or whole animals which have been subject to taphonomic biases? To demonstrate that these are multiple portions from a butchered carcass requires the demonstration that the absence of the rest of the animal is deliberate rather than inadvertent. This is problematic to the point of impossibility in cremations. The average weight of a cremation from Spong Hill, or any other cemetery in the dataset, is substantially below that which would be expected for a fully-cremated adult human without added animal inclusions (McKinley 1994). Worley (2010) gives the weight of the bones from an experimental sheep cremation as 817g, which itself is higher than the average weight of human-animal commingled cremations from eastern England (Chapter 3). It is clear that the cremations are partial representations of the cremation pyre, either via damage or via partial initial collection from the pyre site. The average weight of cremations from Spong Hill which contain only one definite portion of sheep is lower than those which contain either a whole sheep or scattered portions, although not to such an extent that it suggests disturbance or truncation is a determining factor in most cremations – unsurprisingly, since many single sheep portions occur in multiple animal cremations.

Collection biases from the pyre site are perhaps a more significant biasing factor. The unurned cremations from Lakenheath, which have been suggested to be the remnants of human-animal cremations from which the majority of the human bone has been removed and buried elsewhere (McKinley forthcoming; see Chapter 4), are a salutary warning that we may be dealing with very partial representations of what was included on the pyre. Some collection biases, however, may be predictable. Bond (1994) has noted the relative lack of medium mammal podial bones (carpals, tarsals, phalanges) at Spong Hill, and has suggested that these were regularly missed in collection from the pyre site due to their small size. Similarly, large mammal longbones, excepting metapodials, tend to be significantly under-represented from cremations (Bond 1994). This is generally considered to be a result of the combustion processes of fleshed bone, which lead to heavy fracturing of longbones (Symes et al. 2008; Buikstra & Swegle 1988) and therefore limited identifiability, although a second possibility that could provide the same result is incomplete burning of large mammal elements. Incompletely cremated bones (coloured black or brown) are more difficult to collect, simply because their colour makes them harder to spot against the background pyre debris (Worley 2010). Evidence from Field Dalling and Illington suggests that in the small number of instances where bone is poorly cremated, these elements for the most part derive from large mammals (Appendix 2, 3), a pattern which could be due to increased tissue mass surrounding the bone and inhibiting burning, at least initially (Symes et al. 2008). Finally, the tendency of bone which is in proximity on the pyre to end up in proximity when the pyre is burnt out should be noted (Worley 2010). This means that if a section of the pyre site is missed in collecting bone – possibly because the urn was full by that point – then it could be potentially expected that coherent anatomical sections of the animal would be absent from the cremation as collected.

A final problem to mention in connection with cremations, as ever, is identifiability of remains. Along with reduction of sample size by damage and inefficient collection, inability to identify elements which are present as they have occasioned too much damage is a perennial problem which can contribute to the absence of elements. Aside from longbones from large mammals, there is little evidence to suggest which elements might be most affected by taphonomic damage rendering them unidentifiable in cremations. Worley (2010) noted that elements from all areas of the skeleton could be successfully identified following an experimental sheep cremation, suggesting no systematic biases in this instance. However, this is a modern cremation from which collection was both careful and thorough, and further taphonomic biases are likely to be present in archaeological material.

With all these factors taken into account, it is impossible to be certain that when an animal in a cremation appears as series of scattered elements, these in fact represent multiple portions of the same carcass with other portions absent when placed on the pyre. However, there is good evidence to suggest that domestic animals – as is predominantly the case in the inhumation burials – were routinely disarticulated before being placed on the pyre. Direct evidence of butchery, in terms of knife or chop marks, are relatively rare in cremated material, with only just over thirty examples recorded from the whole of the Spong Hill assemblage. These butchery marks, in terms of location and placing, generally appear to indicate disarticulation and portioning rather than meat removal, as might be expected from bones placed into mortuary contexts. Several of these indicate disarticulation between two portions which are both present in the cremation. Cremation 1619 contained elements of pig and of medium mammal from the right-hand side foreleg, including scapula, radius and ulna. Knife marks on both proximal radius and proximal ulna indicate that the leg was split at the elbow. Assuming that the scapula and lower leg derive from the same animal (with no evidence to suggest otherwise), this indicates that the carcass was partially disarticulated, and elements from both above and below the point of disarticulation were included in the pyre. The absence of the humerus may suggest that the reason for the disarticulation is that this portion was destined elsewhere. There are a number of other similar examples within the cremations from Spong Hill where animals have clearly been placed on the pyre in several portions, including cremation 2828, which contained elements from a pig left back leg with butchery marks on the ilium of the pelvis (showing separation from the rest of the animal), plus a portion of ribs; and cremation 2651, which contained elements from a sheep torso (vertebrae and butchered ribs), plus a femur which must have been included separately to the ribs. However, this only demonstrates that these animals were disarticulated before being consigned to the flames, not that particular portions were selected for inclusion and others were missing. Butchery marks have also been noted on elements from cremated horses, which are generally considered to have been included whole, and this is thought to represent a practice of dividing the horse into manageable chunks to facilitate burning and management on the pyre (Bond 1993; 1994); and it is possible that the same is represented with the medium-sized mammals.

Medium-sized taxa (sheep, pig, sheep-size, pig-size and medium mammal) are well represented in most areas of the body, particularly major longbones, ribs and vertebrae, but with a notable dearth of elements from the feet (carpals, tarsals and phalanges) and cranium. While this is a standard pattern for dressed carcasses, which would suggest that medium-sized mammals were prepared and viewed as meat offerings, the absence of elements from the feet is generally attributed to non-collection of small elements from the pyre (see above). It is possible to argue that the same explanation can be attached to the crania, which may shatter into small fragments. However, no similar absence is noted for similar-sized dog inclusions, and it appears unlikely that robust sections of the mandible and cranium (eg. petrous, occipitals), or horncore with its distinctive bone texture, would be regularly missed in collection. The lack of crania of sheep and pigs therefore appears to be a genuine pattern unlikely to be explained by collection biases, indicating that sheep and pigs were regularly not included as complete carcasses. The relatively even pattern of representation among torso and longbone elements also suggests that where a few scattered elements of sheep or pig are represented in the cremation, this cannot be attributed to any systematic collection bias, meaning that either stochastic collection biases are at play, or that certain elements were genuinely not included on the pyre.

For cattle, the evidence of disarticulation is much slighter, in keeping with the smaller size of the dataset. Only two cremations at Spong Hill yielded cattle bone with butchery marks – one indicating disarticulation of the femur (2672A), and one with a lumbar vertebra chopped through longitudinally (2727), usually indicative of carcass bisection. Several other “large ungulate” deposits also yielded butchery marks on ribs and vertebrae, but these cannot be attributed safely to species. Similarly, the element representation of cattle has little to offer, being heavily affected by pyre taphonomy and poor identification of longbone fragments. It is clear from Spong Hill that, similarly to sheep and pigs, cattle were included as single portions and as scattered bones from various areas of the skeleton (eg. crem 2727: left scapula, phalanx 1 and vertebrae), and some cremations where it appears very likely that the whole animal was present. However, several factors mean that we can be less certain that cattle occurred on pyres as multiple disarticulated portions, including: the smaller sample size; more destructive effects of the pyre on larger mammal bones; inability to safely attribute “large mammal” fragments to cattle; and the lack of a smoking gun in terms of butchery evidence.

The evidence from Spong Hill makes it clear that domestic animals – cattle, sheep and pigs - may have been at minimum regularly disarticulated before consignment to the pyre. Since it is impossible to conclusively demonstrate the absence from the pyre of any particular elements from any particular cremation, it is impossible to say for certain that selected multiple portions of a carcass were included in cremations in the same way as they were in inhumation burials. However, considering the highly partial nature of many of the domestic animal deposits, it seems likely. In addition, it is possible to argue that – since animals may have been routinely disarticulated prior to burning – the distinctions between a complete animal carcass, multiple disarticulated portions, and single portions are only of scale, rather than representing any significantly different conceptualisation of the offering.

5.3.4 How much and what bit? Portioning and identity

As noted above, cattle, sheep and pig remains appear to have been included with all ages and sexes, with little specific patterning associated with identity. One outstanding question, therefore, is whether identity is reflected more strongly in either the portions or the quantity of the animal provided. Initially, the data from Spong Hill is used to address this question, as this is the largest single set of data which has sufficient detail on both human identity and domestic animal element representation to be useful; but results from Illington (which is the only other useful site) will also be discussed. Considering the problems associated with large mammal bone in cremations, cattle have been omitted from the following discussion, and only pigs and sheep are discussed.

5.3.4.1 Spong Hill: Sheep

For the following discussion, it should be noted that "sheep" here includes elements identified as sheep; elements identified as medium mammal within cremations which also only contained sheep; and elements of medium mammal in cremations without positively-identified medium-sized taxa which were described as "sheep-size". Considering the absence of deer post-cranial material and the low likelihood of getting dogs mixed up with sheep, it is considered that these "sheep-size" elements are likely to derive mostly from a mixture of sheep and smaller pig bones. To discuss quantity, cremations were coded as containing whole animals (W); multiple portions (MP); single contiguous portion (P); or single element (S) (see Chapter 4). In most circumstances, whole animals and multiple portions are grouped together, as are single portions and single elements.

Tables 5.15 (a-c) show the number of multiple portion deposits compared to the number of single portion deposits against a range of other variables. Most notable is the higher prevalence of multiple portion deposits in cremations which are classed as "multiple" (i.e. containing more than one non-human animal), compared to their prevalence in deposits which are classed as "single". While it is possible this is affected by taphonomy, it also appears likely that the more animals included with the sheep in a burial, the more of the sheep is likely to be included. Similarly, adults appear to have a slightly higher proportion of multiple portion sheep than either juveniles or older adults, which is perhaps a consequence simply of adults having the highest frequency of multiple animal cremations. In terms of sex, men appear to have more single portions of sheep and fewer multiple portions; while in female cremations the ratio is approximately even. However, it should be emphasised that the proportion of the dataset to which sex could be attributed is relatively small, and it should also be noted that the sample size of female cremations is appreciably larger than that of males, both reasons why these results should be treated with caution.

	Multiple	Single
Multiple Portions	48	59
Single Portion	102	205

	Juvenile	Juvenile %	Adult	Adult %	Older adult	Older adult %
Whole		0	6	2.3		0
Multiple Portions	15	22.1	70	27.2	13	25.0
Portion	9	13.2	37	14.4	9	17.3
Single bone	44	64.7	144	56.0	30	57.7
Total	*68*	*100*	*257*	*100*	*52*	*100*

	male	female
Multiple portions	12	31
Single portion	43	57
Ratio M:S	1:3.5	1:1.8

Table 5.15: Distribution of portions of sheep at Spong Hill between a) multiple animal / single animal cremations; b) age categories; c) sex categories.

Tables 5.16 (a-b) show the more specific element representation and body area representation of sheep against a similar range of variables to the portions, above. The most apparent pattern is that ribs are by far the most common element of sheep to be found overall in cremations. Since the table is based on incidence of elements in cremations (i.e. presence / absence) rather than fragment count, it is unaffected by the tendency for ribs to occur in groups, thus increasing the fragment count compared to longbones. In particular, ribs are by far the most common element in the single portion category, meaning that if there is one portion of sheep in a cremation, in almost 50% of cases this portion is a rib portion. However, it should be highlighted that when we are discussing “sheep ribs”, particularly in single portions, what is actually being discussed is “sheep-sized” or “medium mammal” ribs, considering the considerable difficulties of identifying cremated rib fragments specifically to taxon. The exceptional predominance of rib portions is not seen in pigs from Spong Hill, nor with medium mammals from other sites (see below), suggesting that the possibility of some drift between sheep and pig size categories should be considered. However, sheep occur more than twice as often as pigs overall at Spong Hill (Table

5.6, above), and the majority of ribs were considered to be more likely to derive from sheep than pigs according to the original analyst (J. Bond pers. comm. July 2017), lending some credibility to the overall pattern.

	Juvenile	% Juvenile	Adult	% Adult	Older adult	% Older adult
Ribs	40	39.6	118	40.3	28	30.8
Vert	10	9.9	33	11.3	11	12.1
Head	2	2.0	8	2.7	3	3.3
right rear leg	3	3.0	30	10.2	6	6.6
left rear leg	10	9.9	12	4.1	6	6.6
right foreleg	4	4.0	10	3.4	5	5.5
left foreleg	2	2.0	9	3.1	9	9.9
foreleg (all)	12	11.9	42	14.3	19	20.9
hindleg (all)	26	25.7	66	22.5	26	28.6
TOTAL	*101*	*100*	*293*	*100*	*91*	*100*

	Male	% Male	Female	% Female
Ribs	36	48.6	56	34.8
Vert	12	16.2	18	11.2
Head	3	4.1	3	1.9
right rear leg	3	4.1	15	9.3
left rear leg	5	6.8	7	4.3
right foreleg	0	0.0	10	6.2
left foreleg	0	0.0	9	5.6
foreleg (all)	2	2.7	35	21.7
hindleg (all)	14	18.9	39	24.2
TOTAL	74	100	161	100

Table 5.16: Distribution of body parts of sheep in cremations from Spong Hill, between a) age categories and b) sex categories.

The inclusion of ribs or other elements of sheep show some apparent variation between age groups and sexes. Juveniles have the highest proportion of sheep ribs compared to other elements of sheep of all the age groups, although this is at least partially due to the high proportion of single portions included with juveniles (Table 5.15, above). Similarly, male cremations contain a higher proportion of ribs than female cremations, but again this is due to the higher proportion of single portions compared to female cremations (Table 5.15, above). More curiously, older adults appear to have fewer single rib portions included, with even single portions of sheep tending to be from around the legs. This is more difficult to explain away, and may indicate a genuine preference.

Elsewhere in the element representation, there appear to be a slight trend towards different legs preferred in different cremations. In general, NISP for back legs is higher than front legs, which can probably be attributed to the larger size and therefore higher rate of collection and identification of interstitial bones in the back leg (e.g. patella, calcaneus and astragalus). Although elements from across the skeleton are present in every age category, each age category also appears to have a different preferred sheep leg: left rear legs are most common in cremations with juveniles; right rear legs are most common with adults; and left forelegs are most common with older adults. However, this is likely an artefact of data construction. The element representation is again constructed on incidence of elements in cremations, which are then totalled to produce the leg group results. If, therefore, a single cremation contains one left hindleg consisting of femur, tibia, astragalus and calcaneus (all sided), this will count as four left hindlegs in that particular age category in the table. As the sided dataset is relatively small, one large cremation might easily produce an artificial peak, and therefore this relatively small-scale variation should be ignored. The apparent preference towards right rear legs in adult cremations, which is more marked than the others, is influenced by the use of sheep astragali, particularly right-hand side ones, as manuports (see Section 5.7).

In summary, patterns within portion and element representation for sheep tend to be slight and often explicable by reference either to taphonomic factors or to inevitable glitches in data calculation. In particular, there appears to be very little discernible patterning by age and sex in terms of element representation, with no especial evidence of entitlement or reservation of particular parts of the sheep for offering to particular people.

Instead, the main discernible patterning appears to focus around quantity, with the wealthier cremations, containing more animals, also tending to contain several portions of sheep. Conversely, when a single portion of sheep is present in a cremation, this is most often a rib portion. In some ways, this recalls the situation in the inhumations at Lakenheath, where the part of the sheep represented is highly variable and appears to matter less than the fact of its inclusion. In terms of sheep at Spong Hill, the importance appears to be placed not on what portion, but rather on how much.

5.3.4.2 Spong Hill: Pigs

As with the sheep, above, the category “pig” here contains elements identified as pig; elements identified as medium mammal within cremations which also only contained pig; and elements of medium mammal in cremations without positively-identified medium-sized taxa which were described as “pig-size”. The dataset for pigs is substantially smaller than that for sheep (above), primarily since pigs are less common than sheep in the Spong Hill cremations. However, as discussed above, it is also the case that unidentified medium mammal bone was more commonly recorded as “sheep-size” than “pig-size”. Identification of cremated material to size category is an uncertain business, particularly in the Anglo-Saxon period where there may not be that much gross variation in size between pigs and sheep, and the possibility of some slide between these categories should be borne in mind.

Tables 5.17 (a-d) show the prevalence of multiple portions and single portions of pig against a range of variables from the Spong Hill dataset. Single portions of pig are more common in cremations than multiple portions. Unlike with sheep, there is not the same pattern of multiple portions being most common in cremations which contain multiple taxa, with single portions more common than multiple portions in both multiple and single animal cremations. However, there appears to be little patterning in terms of quantity between different age groups and sexes, as seen also from the sheep. Multiple portions of pig in burials with multiple animals (i.e. representing greatest investment of organic wealth) are not found associated with juveniles at all. Regarding sex, it has previously been recognised that more pigs are included with females than males at Spong Hill (e.g. Hills & Lucy 2013). The majority of the pigs included with males are single portions, while females are equally as likely to have single or multiple portions. While the small size of the dataset should again be noted, it is also worthwhile noting that this parallels the situation with the sheep, and it is therefore arguable that there is an overall trend for female cremations to contain several portions of a sacrificed medium mammal more often than their male counterparts.

	Multiple	Single
Multiple portion	18	18
Single portion	23	29

	Juvenile	Adult	Older adult
Multiple portions	5	22	7
Single portion	6	29	9

		Juvenile	Adult	Older adult
Multiple	Multiple portion		14	4
Single	Multiple portion	5	8	3
Multiple	Single portion	2	16	3
Single	Single portion	4	16	6

	Male	Female
Multiple portions	2	10
Single portion	8	16

Table 5.17: Distribution of portions of pigs at Spong Hill, between a) multiple animal and single animal cremations; b) age categories; c) multiple / single animal cremations and age categories; d) sex categories.

Tables 5.18 (a-b) show the element representation and body area representation against a range of variables. Again, there is little patterning visible, and much of what is apparent in terms of frequency of sided leg portions can again be put down to the way in which the analysis has been constructed. Rib portions, and particularly single rib portions, do not occur with the same frequency as do sheep rib portions. This has been discussed, above, but this may indicate that medium-sized ribs were identified more readily as “sheep-size”, or that if a single rib portion is included, it is far more likely to be sheep than pig, and the truth may well be a combination of these two situations. In terms of age and sex, as with sheep, there appears to be no strong preferences towards portion for any particular category of person.

	Juvenile	Juvenile %	Adult	Adult %	Older Adult	Older adult %
Ribs	4	15.4	20	16.9	5	18.5
Vert			5	4.2	1	3.7
Head	5	19.2	2	1.7	1	3.7
right rear leg	2	7.7	15	12.7	6	22.2
left rear leg	1	3.8	11	9.3		0.0
right foreleg	5	19.2	7	5.9	4	14.8
left foreleg	2	7.7	6	5.1	2	7.4
foreleg (all)	7	26.9	26	22.0	7	25.9
hindleg (all)	5	19.2	40	33.9	8	29.6
TOTAL	26	100	118	100	27	100

	Male	Male %	Female	Female %
ribs	3	20.0	9	16.1
vert			2	3.6
head	1	6.7		
right rear leg	2	13.3	8	14.3
left rear leg	3	20.0	2	3.6
right foreleg			6	10.7
left foreleg	2	13.3	2	3.6
foreleg (all)	3	20.0	17	30.4
hindleg (all)	6	40.0	17	30.4
TOTAL	15	100	56	100

Table 5.17: Distribution of body parts of pigs at Spong Hill, between a) age categories and b) sex categories.

5.3.4.3 Spong Hill sheep & pigs: Summary

The question posed at the beginning of this discussion was whether personal identity influenced either the quantity or portions of domestic animals included in cremation burials at Spong Hill, a question for which only the data from medium-sized mammals could productively be considered. While the dataset is complicated, partial and variable, several patterns are discernible. Firstly, for both sheep and pigs, female burials contain more “multiple portion” deposits proportionally than do male burials. The most common portion of medium mammal to be included in cremations is the rib portion. These are particularly common as single portions, indicating that if one portion of medium mammal is going to be placed in a burial, it is preferentially a rib portion. This is particularly the case with juvenile burials and less so with older adults, where single portions of leg elements are more frequent. Sheep inclusions are substantially more frequent than inclusions of pigs, and, perhaps as a consequence, these patterns are more easily discernible in the sheep dataset than among the pigs.

Perhaps the most important result, however, is the distinct *lack* of unequivocal patterning in terms either of portions or of quantities of medium mammals. Beyond an overall preference for ribs, and a deficit of cranial elements, there are no clear preferences with either pigs or sheep for the inclusion of certain portions with certain categories of people. There is no evidence, either, for clear structuring within the groups of portions – instead, different elements from different areas of the body are included together in a wide variety of combinations. While it should be noted, again, that the information from cremations in terms of element representation is unavoidably partial, this corresponds to the much more sparse data from the inhumations, where the portions of sheep included are also highly variable and do not appear to follow any evident patterning. Three explanations can be suggested for this. Firstly, the portion of the animal included may matter significantly less than the quantity of meat that it represents, or whether it is a rib portion or from elsewhere on the animal. A second possibility is to see Spong Hill as a very large cemetery, which may incorporate multiple local traditions of “correct” portions to be included in burials, although evidence from the inhumations and from other cremation cemeteries (below) seems to indicate that variation in inclusion of portions is not just restricted to Spong Hill. Finally, it is arguable that the inclusion of different portions is arranged along complex lines of identity which may be invisible archaeologically. The ethnographic example from West Africa, where a sacrificed cow is divided amongst mourners at a mortuary feast (Goody 1962; see above), emphasises the importance of the community both in providing animals for sacrifice and in participating in their redistribution. The distribution of meat in this case is based on a relational identity, with what you get depending on where you stand in your relationships with the dead (Goody 1962). It is worth remembering that the deceased is only one member – albeit a central one – of a community, and the relationships within this community, as well as other invisible aspects of identity (e.g. marital status, number of children, hunting or animal management skills), may have been as important as anything else in determining what was appropriate with which to gift the dead.

5.3.4.4 Multiple Portioning and Identity at Other Cremation Cemeteries

Beyond Spong Hill, evidence for the ways in which domestic animals were incorporated into cremations is relatively sparse, partly as a result of unavailability of element representation data from the majority of sites, and partly due to the much smaller size of the non-Spong Hill dataset. Nevertheless, several cremation cemeteries also show evidence consistent with the inclusion of multiple portions of domestic animals in cremations, including Sutton Hoo (mound 6), which contained remains from a minimum of two pigs as well as sheep and large mammal elements; and Minerva (C1296), which included elements of pig from several different body areas. The only clear evidence for butchery and dismemberment derives from Field Dalling, and is found not on domestic animals but on two inclusions of roe deer, discussed below (Section 5.5.2). It appears highly likely that one of these deposits (crem 161) included multiple portions of roe deer.

Illington is the only other site which falls within the Eastern England dataset for which both human age data and domestic animal element representation are available, and which is therefore directly comparable to Spong Hill. The number of medium mammals identified in cremations at Illington is an order of magnitude smaller than the number from Spong Hill – the entire dataset from Illington comprises only eighteen examples of medium mammals, of which seven are included with humans which could not be aged ("indeterminate"). Additionally, it should be noted that instead of the categories "sheep-size" and "pig-size", the more general "medium mammal" was used to describe unidentified bone, and this has therefore not been attributed to taxon in cremations where neither sheep nor pig have been positively identified.

Tables 5.19 (a-b) show the quantity and portioning information for medium mammals from this site, against a similar range of variables to Spong Hill. While pig, sheep and medium mammal are tabulated separately, the results show little distinction between the taxa and therefore they are discussed together. Single portions are most frequent in the dataset, with only six cremations containing multiple portions. In direct contrast to Spong Hill, multiple portions are only found at Illington in cremations which contain a single taxon, with cremations containing multiple taxa limited to a single portion of medium mammal. This is in many ways a more intuitive pattern – the more animals you have, the less of each you are likely to have – and may indicate more equality in the inclusion of organic wealth, and perhaps less ability among the community at Illington to sacrifice animals to the extent which was required for wealthier graves at Spong Hill.

		juvenile	adult
Pig	Multiple portion	1	1
	Single portion		
Sheep	Multiple portion	1	1
	Single portion	1	3
Medium mammal	Multiple portion		
	Single portion		3

PIG	**juvenile**	**adult**	**indet**
Head			
Vert			
Ribs	1		
foreleg right			
foreleg left			
hindleg right	1		
hindleg left			
foreleg (all)		1	
hindleg (all)	1	1	1
SHEEP	**juvenile**	**adult**	**indet**
head	1		1
vert		1	1
ribs		1	
foreleg right	1		
foreleg left			1
hindleg right		1	1
hindleg left	1	1	
foreleg (all)	1	1	1
hindleg (all)	1	2	2
MEDIUM MAMMAL	**juvenile**	**adult**	**indet**
head			
vert			1
ribs		1	
foreleg right			
foreleg left			
hindleg right			1
hindleg left			
foreleg (all)	1	1	1
hindleg (all)			1

Table 5.19: Distribution of medium mammal portions against age at Illington, showing a) multiple / single portions and b) body part distribution.

Domestic animals were predominantly included with adult cremations at Illington, with only three inclusions with non-adults: one sheep with an older child; one pig with an adolescent; and one deposit of medium mammal with a cremation described as “immature”. In all three, the medium mammal is the only inclusion. In two out of the three cremations, one of which is the older child, multiple portions of the medium mammal are included. While the dataset is too small to offer much by way of observations, it serves to demonstrate again that younger people were eligible to receive animal offerings which could easily be more substantial than many included with adults in the same cemetery, indicating a complexity to these inclusions which is not merely based on biological identity.

Finally, the element representation from Illington shows little patterning either between age groups, or in terms of preferences for the inclusion of any particular body areas. Notably, there is no particular preference towards medium mammal rib portions similar to that shown at Spong Hill, with only three medium mammal rib portions identified from Illington as a whole. Since the sites were assessed by different analysts, the possibility of inter-observer variability must be raised, and cannot easily be addressed. However, an abundance of medium mammal ribs has not so far been noted at any site other than Spong Hill, and it is distinctly possible that this represents a genuine example of inter-site variation. Medium mammal ribs at Spong Hill were among the most frequent and the smallest possible meat offerings. Illington shows a lower frequency of inclusion of animal offerings overall than Spong Hill, and it is perhaps possible that just as there is less call to create very wealthy individual offerings at Illington, so it is possible that there is less call to offer animals within burials at the lower end of the scale. Speculation aside, the differences in practice between Illington and Spong Hill in terms of portioning of domestic animals indicate that, while taphonomically problematic, this may prove a productive way into investigating small-scale variation in practices.

5.3.5 Mortuary Feasting – a discussion

The inclusion of multiple portions of what is presumably the same animal in inhumation graves, and probably cremation pyres, makes it highly likely that feasting occurred in relation to mortuary rites. While meat could be preserved and stored in the Anglo-Saxon period (Banham 2004; Hagen 2006), the presence in particular of crania, which contain offal which does not preserve well, strongly indicates that these animals were killed as part of the mortuary rites. The inclusion of only part of the animal in the grave then begs the question as to where the remainder of the animal has gone, the most likely solution to which is that it was distributed amongst the community of mourners in some fashion. Mortuary feasts are common among many different cultures across many different periods, with or without the provision of food specifically for the dead (Parker-Pearson 1999; Russell 2012: 381). They may occur at the graveside or elsewhere within the community; and they may be directly associated with the funeral, or occur at points afterwards to memorialise the dead.

The feast was an important symbol in Anglo-Saxon England from the eighth century onwards (Lee 2007; Pollington 2003). Sharing food was perceived as an important means of creating community and materialising power relations, and hosting a feast involved a duty of hospitality and protection between guests and hosts which meant acts of violence within this context could be read as acts of betrayal against this agreement (Pollington 2003). Lords took on the responsibility of feeding their retainers, as recompense for their service as warriors, and these ties materialised by food were strong enough to challenge the bonds of family, as in the story of Cynewulf and Cyneheard, where ending up on the opposite side of a disagreement to their kinsmen, the men consider their loyalty to their king as greater than their loyalty to their family (Pollington 2003). At the other end of the equation, rent was paid to landowners in the form of food renders (Banham & Faith 2014: 3). However, while food and domestic animals seem from the written evidence as critical in tying the fabric of society together, meat seems relatively unimportant in poetic descriptions of feasts. Instead, in accounts such as Beowulf, beer and mead appear to be the dominant motif indicating community and a good time (Crossley-Holland 2002; Pollington 2003). While domestic animals may have been critical in creating the feast in a practical sense, they are perhaps less important in its symbolism.

While feasting was likely to be occurring associated with mortuary rites in 5th-7th century England, there is little evidence to indicate where these feasts were taking place or their nature. Several “burnt stone features” have been found at the cemeteries of Snape and Flixton in Suffolk, which are considered to be potentially associated with cooking (Pestell 2001; Boulter & Walton-Rogers 2012). The features are shallow pits filled with stones which show evidence of heating, as well as charcoal and other burnt material. An approximate reconstruction at Snape demonstrated that a fire built of loosely-layered wood and stones would burn consistently and at a high temperature for a number of hours, and could easily have been used in a similar way to a barbecue (Pestell 2001: 260). While so far these features have been recorded only from these two cemeteries, this is potentially a problem of recognition and interpretation, with Pestell suggesting further examples from cemeteries in Cleveland, Warwickshire, and Cambridgeshire, as well as one further instance from a contemporary settlement in Lincolnshire (Pestell 2001: 260). The presence of these features, even in a very few cemeteries, is intriguing, suggesting that some form of feasting may be occurring actually on-site. However, the current sparseness of the evidence leaves many question unanswered, including whether this was a practice confined to one particular area or time period, or even whether it was associated with both rites or exclusively with inhumation burial. Similarly, if feasting is occurring on-site, there appears to be little specific evidence within the animal bone assemblages to indicate this. Contra Lee (2007), there are no clear examples of consumption waste from mortuary activity incorporated into grave fills, with the examples assessed in this study more convincing as residual bone from earlier activity (see Chapter 3). Another feature which might be expected to indicate mortuary feasting on-site, and subsequent waste disposal, would be pits contemporary with the cemetery, containing animal bone and other consumption waste, possibly across multiple fills. Again, while the occasional pit containing faunal remains has been reported in the dataset from sites such as Great Chesterford and Caistor-by-Norwich, none of these is clearly the remains of feasting debris nor has been interpreted as such. The evidence to indicate that mortuary feasting was occurring on cemetery sites is currently very slight, therefore, but neither is it non-existent. It is possible with close attention paid to non-grave features, particularly on inhumation sites, the situation and practices involved may be clarified. On-site mortuary feasting might be expected more often on inhumation sites than cremation sites, as the main display of the body in cremation – and the major sacrifices and rituals accompanying it – seems to happen at the pyre site, which may well have been at a different location to the urnfield.

Finally, it is worth noting that while the practicalities of portioned domestic animals in graves and in cremations entail some form of food distribution among mourners, these animals may not necessarily be simple food offerings. Unlike in earlier Roman deposits, where food was clearly prepared and presented to accompany the dead, there is little evidence of how these meat portions were prepared. Whether the meat was cooked or not is hard to ascertain. In cremations, the question of whether it was cooked before it was burnt is entirely unanswerable, and somewhat moot; as is the question of how the animals were presented within the tableaux. Within the inhumations, the portion(s) of sheep ribs from mound 17 Sutton Hoo is thought to have been contained within a leather bag, suggesting in this instance an idiom of food for transportation on a journey. By contrast, it is hard to see the Oakington cow burial as something which could reasonably be considered as a meal. Most of the deposits fall somewhere in between these two extremes – not evidently presented on any media, but placed within the grave and near to the body, plausibly either food or raw meat. It is possible that these deposits occupied a grey area of multiple meanings, including as food for the dead on their post-mortem journey, the deceased’s share in the mortuary feast, sacrifices where the act of sacrifice was as important as its eventual fate, representations of material wealth, or as tokens of the entire animal. While it is easy to view domestic animal portions simply as “food for the dead”, this is perhaps too simplistic an interpretation.

5.4 Dogs

Dogs play a unique role in past human societies, as one of the earliest animals to be domesticated and one of the only predators to live commensally with humans. In the early Anglo-Saxon period, it is likely that there were multiple attitudes to dogs and multiple roles which dogs would have played, which would have included hunting, protection, livestock management and companionship (see Chapter 2). As pack animals, dogs have certain affordances which make them capable and liable to form close relationships with individual humans. Similarly, their usefulness derives only from functions which they fulfil as the living animal, so would not have been regularly killed for products the carcass can provide.

Some problems pertain, especially in cremation burials, in distinguishing between dogs and other common canid species, specifically foxes and wolves. Both red fox (*Vulpes vulpes*) and wolf (*Canis lupus*) are part of the early Anglo-Saxon bestiary, and their remains have been found both within settlement assemblages and within graves (Holmes 2014; see below, Section 5.5). Where there is uncertainty in identification of remains between these taxa, these have either been excluded or are clearly indicated to be uncertain. Perforated canid teeth and other worked bone have been excluded and are discussed with other curated bone (Section 5.7).

5.4.1 Results

Table 5.20 lists all the dogs recorded from cemeteries within the eastern England dataset. Compared to horses and other domestic mammals, dogs are extremely rare, accounting for just over 3% of all animal inclusions in burials.

Site	Cremation with dog	Inhumation with dog
Cleatham	3	
Elsham	4	
Illington	1	
Spong Hill	19	
Sutton Hoo	1	
Great Chesterford		2

Table 5.20: Dogs in burials at cemeteries in the Eastern England dataset.

A total of 28 dogs are recorded from cremation cemeteries, of which Spong Hill accounts for the majority of incidences. Only two examples are recorded from inhumations, both of which derive from Great Chesterford. The low prevalence of animals in inhumations and rarity of dogs in burials in general means that the prevalence of dogs in inhumations countrywide appears to be extremely low. A survey by Prummel (1992) records nine examples of dogs within inhumation contexts countrywide, including the two examples from Great Chesterford, and a further three from older cemetery sites in eastern England (Table 5.21). Since the numbers within inhumations are so sparse, examples from Prummel (1992) and other summaries (Wilson 1992; Lucy 2000; Fern 2005) are included in discussion, below.

Site	County	Age of human	Sex of human	Details of dog	Position of dog
Great Chesterford	Cambridgeshire	Alone		old, small	
Great Chesterford	Cambridgeshire	Juvenile	m	old, medium	foot of grave, above feet
Foulden	Norfolk	Unk	m		dog head on human knees
Loveden Hill	Lincolnshire	Elderly	m	old	at feet. Also contained 5 yr old child
Loveden Hill	Lincolnshire	30yrs	m	old	unk. Man's feet severed and put behind knees
Minster Lovell	Oxfordshire	Unk	f	small	intermingled with person
Cookham	Berkshire	Unk	m		
Mitcham	Surrey	Unk	m	small	beneath sword, lying across burial
Cornforth	Durham	Unk	unk		with horse

Table 5.21: Dogs in inhumation burials and cemeteries, after Prummel (1992) and other summaries.

In the vast majority of cases, the dogs in both cremation and inhumation burials are single, complete animals with no evidence of disarticulation. Cremation 1725, of an adult, from Spong Hill is unique in containing a minimum of two dogs of different sizes. Element representation of dogs from Spong Hill indicates a remarkably high level of completeness in these burials compared to other, similar-sized mammals. In particular, there is no specific under-representation of parts of the skeleton, suggesting effective cremation and collection in many instances. In the cases where dogs are represented only by a part of the skeleton (e.g. Spong Hill, crem 3059: hindleg and vertebra), it appears likely that this is due simply to inadequate collection from the pyre site.

While it is difficult to tell the age of dogs from cremations, fusion information suggests that almost all of the animals represented were adult. The only exception to this is a possible juvenile dog from the grave of a young adult at Cleatham, Lincs, but all other animals for which age could be identified were upwards of 8 months old. For inhumations, all individuals where age was given were adult dogs, and in almost half of cases (4 out of 9) were described as “old”, generally on the basis of tooth wear and/or presence of osteoarthritis. There is significant size variation between dogs, with several described as small “lap-dogs” (e.g. Minster Lovell), and one large example from Spong Hill described as “wolf-size”. While metric data is not recorded from cremations and many inhumations, more dogs are described as “medium-size” or “small”, with only the above mentioned example from Spong Hill described as “large”.

The only dogs in the dataset which have been subjected to substantial osteological recording are those from Great Chesterford, recorded by Serjeantson (1994), and these are worth discussing in some detail. The first dog (Dog skeleton 1) was interred with a young male, in the upper levels of the grave, above the feet. The dog in question had a shoulder height of 60-62cm (approximately the size of a large Labrador), and was male and old. Several teeth had been either broken or lost prior to death, and both knee joints were affected with osteoarthritic changes (Serjeantson 1994:67). The second (Dog skeleton 2) had no definite associations, the only example of an animal burial without human in mortuary context which is not a horse. The Anglo-Saxon date of the burial has been confirmed by radiocarbon dating (Evison 1994). The dog was smaller than the first, at 33-38cm shoulder height, but was also identified as an older male dog. Again, one molar was lost ante-mortem, and the left distal humerus and proximal radius showed signs of arthritic changes (Serjeantson 1994:67). The age of these dogs, and their evident ill-health, indicate a long life-history, probably spent in close association with humans.

5.4.2 Dogs and Humans

Unlike other categories of animal, dogs are not strongly associated with any particular age or sex of person. Among the inhumation burials, dogs are more often in male graves than in female graves (6 males vs. 1 female). Age is rarely specified, but the few aged examples include adults, juveniles and the elderly, including one double burial from Loveden Hill of an elderly man, a five-year old child and a dog (Lucy 2000: 90). A second burial from Loveden Hill, intriguingly, can be categorised as deviant – an adult male whose feet were severed and put behind his knees, was buried with an elderly dog (Wilson 1992: 100).

Within cremations, the distribution is equally diverse. Among the 33 burials with dogs for which age has been attributed, almost a quarter was included with infant or juvenile burials, and 13% with mature or older adults (Table 5.22). Furthermore, two of the dogs – from Cleatham and from Spong Hill – were included with infants. This reflects the distribution of medium-sized domestic mammals (e.g. 18% of sheep / medium mammal remains at Spong Hill were in juvenile burials, and 13% were with older adults), although cattle, horses and all wild taxa are predominantly included with adults (Section 5.2 and 5.5; Section 6.2). Sex information is as ever sparse, and it can only be said that dogs occur with both male and female burials. There appears to be little correlation between the size of dog and age or sex of human, although it is notable that the largest dog from Spong Hill is in the grave of a juvenile.

Age category		% total
infant	2	6
juvenile	6	18
adolescent	4	12
younger adult	8	24
mature adult	2	6
older adult	3	9
adult (unknown)	5	15
Total	33	100
Sex Category		
male	2	33
female	4	66
Total	6	100

Table 5.22: Age and sex of cremation burials containing dogs.

While position of dogs in the grave tableaux is clearly irretrievable for cremations, this information is given for five out of the eight inhumations. At Great Chesterford and Loveden Hill, dogs are recorded as positioned at the feet of the humans (Serjeantson 1994; Lucy 2000: 90). At Mitcham and Minster Lovell, the association is even closer, with the dogs recorded as "intermingled" with the skeleton at Minster Lovell, or at Mitcham, as lying across the burial, beneath the sword (Meaney 1964: 210; Wilson 1992: 101). These two dogs were both described as "small", and indeed it is hard to see how a large dog could have been positioned over a human body without somewhat spoiling the visual effect. At Foulden, Norfolk, the dog was recorded as having its head on the knees of the human burial (Prummel 1992:175). Since this was a chance find recovered during gravel extraction in the early twentieth century, the information should be treated with some caution – however, the positioning does appear to correlate with the closeness to humans displayed in other burials.

5.4.3 Dogs and other animals

In inhumation burials, other animal bone is rarely recorded in burials containing dogs. In only two of the nine recorded burials is any other animal bone recorded. At Cornforth, a dog is included with a human and horse burial, although no further information is available regarding this burial (Fern

2005; Prummel 1992). At Minster Lovell, the grave of a woman with a small dog was also reported as containing pig bone, although the lack of further detail makes it difficult to be confident this is a meat deposit rather than an incidental inclusion (Prummel 1992:175). No other deposits were reported from other burials, although in cases such as Foulden it is possible that other deposits were originally present but not excavated or recorded. However, this fits the general pattern of inhumation burials, where animal deposits tend to be rare and multiple animals even more so.

In cremations, information is only available for three of the cemeteries recorded (Illington, Spong Hill and Sutton Hoo). Dogs occur singly in 9 cases and with other animals in 12 cases (Table 5.23). The most common animals with which dogs occur are horses and sheep, including large and medium mammal. Other animals include pig and chicken. The repeated co-occurrence of dogs with horses and sheep is unsurprising, considering that they are by far the most common animals found in cremations, and therefore it is also not especially telling.

	with dog
Multiple	12
Single	9
Horse	5
Sheep	4
Pig	2
Chicken	1
Medium mammal	3
Large mammal	5

Table 5.23: Number of dogs with other animals in cremation burials from Eastern England.

5.4.4 Discussion

Dogs are rare in both cremation and inhumation burials across Anglo-Saxon England. They are mostly single animals, in a variety of sizes, in most cases adult or old and sometimes displaying age-related infirmities. They are not associated with a particular type of person – instead, they occur with both males and females of all ages – nor are they associated consistently with any other animal. Within the inhumations, there regularly appears to be an attitude of closeness and subservience of dogs to humans displayed in the grave tableaux.

As mentioned above, dogs are classic animals where multiple roles and multiple agencies can persist, which inform attitudes towards them in life and treatment in death. One role which appears to have been particularly significant in contemporary Continental burials is that of hunting. Dogs in Continental inhumation burials are regularly found with horses, sometimes in large numbers, in graves which have been interpreted as displaying elite wealth and prestige (Prummel 1992). The evidence of a hunting scene involving dogs chasing a deer from a cremation urn at Spong Hill (Hills et al. 1987, see below) certainly suggests that this kind of hunting was known in early Anglo-Saxon England, although the scarcity of game animal bones on sites of this period attests to its minor role in diet. It is arguable that burials of dogs with horses, as evidenced in the Spong Hill cremations or at Cornforth, or especially in the cremation from mound 4 at Sutton Hoo, are reflections of an emergent hunting practice. However, horses are a common inclusion and rarely associated with dogs, and there have been no finds of hunting hawks associated with early Anglo-Saxon graves found to date in England. Instead, the scarcity and variability of dogs indicate more personal reasons for their inclusion. The closeness with which humans live with dogs means that, while they are still unequal partners, the dog's personality and agency is highly important to the developing relationship (Payne et al. 2015). Dogs which are strongly attached to their owners may suffer distress when their owner dies, as a result of separation anxiety (Schwartz 2003). This in turn may make them more likely to be considered to be bound up with their owner to the extent that there is little option but to follow them to the grave. Other dogs may have retained some of their lived functions after death, and were sent on as hunting dogs, working dogs or guardians. The variety of dogs in burials likely attests to a variety of beliefs and reasons for inclusion, rather than any especial overarching pattern.

5.5 Sundries: Birds & Wild Fauna

Animals other than horses and domestic mammals (cattle, sheep, pigs and dogs) are rare in Anglo-Saxon burials, comprising just over 10% of total animals from cremations and 26% of all animals in inhumations. However, within this, a substantial range of taxa are represented, including both domestic and wild birds, deer, bears, foxes, beaver, and other incidental inclusions. Some wild mammals are represented primarily by curated bone or antler, and this is discussed separately in Section 5.7.

5.5.1 Birds

In total, birds make up only 4% of everything identified from cremation and inhumation cemeteries. In both rites, domestic birds (chicken and goose) make up the majority of cases, with a few examples of wild birds, predominantly game birds, also represented. Bird bones from inhumation cemeteries are typically identified to species, but cremated bird bones are more difficult to identify. Of the 20 examples of bird bone from cremations in the dataset, 7 are only identified to the level of "bird". Targeted re-identification of bird bone from Spong Hill added several taxa to those previously known from the site (see Appendix 5). While it is worth noting that eggs have been recovered from a number of inhumation burials across the country, including at Great Chesterford (Evison 1994, Lucy 2000), these are not discussed as part of this dataset.

In the Eastern England dataset, birds are recorded from cremations across six cemeteries (Spong Hill, Illington, Field Dalling, Great Chesterford, Tranmer House, Markshall) and in three inhumation cemeteries (Castledyke South, Lakenheath and Oakington), amounting to 29 examples in total. These are discussed by species, below.

5.5.1.1 Domestic Birds

The most common birds found in burials are domestic birds – chicken and geese – reflecting their frequency on settlement sites. As in the domestic diet, chickens outnumber geese, with thirteen possible examples of chickens compared to three examples of domestic geese.

In inhumation cemeteries, the majority of examples of domestic bird derive from Castledyke South, where chicken is the most common taxon to be included in burials, and domestic birds comprise over 40% of all animal bone inclusions. The only other cemetery from which chicken was identified is Lakenheath, with a single deposit in one grave. A further possible example of domestic goose is represented by a synsacrum from a grave at Great Chesterford, which could represent a partial deposit – however, Great Chesterford also yielded substantial quantities of residual bone, and therefore the provenance of a deposit of a single bone fragment is uncertain, and is therefore not included in further discussion. In every case, the birds are the only animal bone deposited in the grave.

Domestic birds at both Castledyke and Lakenheath predominantly occur as whole birds, with no reported evidence of butchery. The chickens from Castledyke are reported predominantly as post-cranial bone, indicating the possibility that these birds may have been decapitated before burial. While this is feasible, it is also worth noting that this pattern may be taphonomic, owing to the fragility of bird cranial elements. Birds occur in a discrete deposit adjacent to the person. The chickens from Castledyke are consistently placed on the right-hand side of the grave, positioned anywhere between the head and the knees. The chicken from Lakenheath is associated with a person buried in some form of container (Jo Caruth, pers. comm. May 2016). Outside of Eastern England, one other deposit of chicken has been reported from Portway, Andover, which is similarly complete and similarly positioned adjacent to the body.

Of the five examples of chickens from Castledyke, all are with adults or (in one case) in a double adult-juvenile burial. Three are in female or possible female graves – the others are unsexed. One of the unsexed burials is described as an older adult. This association with females and potentially juveniles is the standard pattern of animal deposits at Castledyke, and is repeated across other taxa (see Chapter 6). By contrast, the chicken from

Lakenheath is buried with an adult male, which fits the standard pattern for that cemetery; and the chicken from Portway is described as being with an older adult male. In terms of age and sex associations, chickens then appear to have no strong intrinsic connections to any particular class of people, but are instead conform to the pattern that is prevalent in each particular inhumation cemetery.

The one substantial deposit of goose from Castledyke similarly represents a complete bird, but is held in the crook of the arm of the person it is buried with. It occurs in an adult male grave, in contrast to the female / juvenile pattern evinced by the chickens and in the remainder of animal deposits from the cemetery. It is possible that this is a specific case of gender signalling, although it is hard to imagine why this should be the case for this male burial and none others. The proximity of the goose to the human in the grave tableau might instead indicate an unparalleled individual history which led to this deposit being deemed appropriate. This is more possible, as the only other unequivocal reported instance of goose from an inhumation cemetery is that of a goose wing from a 7th century male grave from Farthingdown, Surrey. This is more likely to have served a decorative function, and parallels a duck wing found from Oakington, Cambridgeshire (discussed below).

Evidence of domestic birds from cremations in Eastern England is similarly sparse, partly due to difficulties in identification but also reflecting a lack of bird bones in cremations. Chickens (including galliforme and chicken-size) are present in cremations from Spong Hill, Illington and Field Dalling; domestic geese are represented by two examples from Spong Hill only. However, there does not seem to be a strong regionality to the practice of including domestic birds, with at least one example of cremated chicken reported from the Butler's Field cemetery, Gloucestershire. Unidentified bird bone is present in a number of other cemeteries in the Eastern England dataset, including Tranmer House, Great Chesterford and Caistor-by-Norwich.

From the examples of domestic bird which we have, there appears to be little specific patterning in their representation. Chickens occur both singly and in multiple animal deposits (most commonly with horse / large ungulate and/or with sheep or pig), while geese occur only in multiple animal deposits. Age and sex data from the humans is only available from Spong Hill, and shows chickens as with adults of both sexes and in one case with a juvenile; while the geese are exclusively with younger adults. It is possible that geese, as the larger sacrifice, were included with wealthier and high status graves than chickens commonly were. However, both seem to serve as adjunct deposits, being relatively rare but not of evident significance in terms of identity construction.

Both deposits of geese at Spong Hill consist only of identified wing bones, raising the possibility that these were decorative wings such as at Farthingdown and Oakington. Most bird skeletons identified within cremations are highly partial, which can be more confidently attributed to poor collection from the pyre and the fragility of cremated bird bone than cremation of butchered carcasses. Goose wing bones, particularly radii and humerii, are among the largest and most robust elements of the goose skeleton, and the overwhelming prevalence of these elements and lack of any evidence of butchery indicates that taphonomy and identification may be the simpler explanation in this case.

5.5.1.2 Wild Birds

Only seven examples of wild birds have been identified from the Eastern England dataset, six from cremations and one example within an inhumation. With one exception, all are game birds – ducks, wild geese, and plover – which are found not infrequently on early Anglo-Saxon settlement sites (Holmes 2014).

The only example of wild bird bone from an inhumation is a single duck wing from Oakington, from a minimally-furnished male grave (Nottingham 2015). No location is specified for this deposit. However, the full wing is present and the humerus is noted to have been snapped, perhaps in the process of jointing the carcass, making it highly likely that this is a deliberate deposit of a single wing (Nottingham 2015). Duck wings can be brightly patterned, particularly those of drakes, and it is suggested that this was included for decorative purposes (Nottingham 2015). A similar example of a single goose wing included in an Anglo-Saxon grave has been reported from Farthingdown, Surrey (Lucy 2000: 93; Meaney 1964: 241).

Of the handful of examples from cremation cemeteries, three are ducks (Spong Hill, Elsham Wolds), two are small wild geese (Illington, Markshall), one is a plover (Spong Hill) and one is a small passerine, similar to a blackbird (Spong Hill). In four out of the five cases where there is reliable data, the wild birds are part of cremations with other animals. As with the domestic birds discussed above, the remains are typically very partial, but this is more likely related to burial taphonomy than deliberate portioning, as there is little consistent patterning. Of the six cases where age of the associated human is known, five are with adults or adolescents, and one is with an older infant. No reliable sexing information is available.

There are too few examples of wild birds to do more than note that hunted birds were occasionally considered an appropriate offering in a number of cemeteries. Game birds provide the majority of evidence for hunting as part of preparation for burial, with a similarly minimal number of wild mammals included in graves. The inclusion of a small passerine from Spong Hill is so far exceptional. Evidence of human interaction with wild birds such as passerines is minimal – while they would have helped create a sense of environment (e.g. Poole & Lacey 2014), the opportunity for direct relationship is small. It is possible that this bird was an accidental inclusion in a pre-built funeral pyre, but this also seems unlikely unless it was dead to begin with. It seems likely that an unusual and specific combination of circumstances led to the inclusion of this particular bird. There is evidence of practices in this period of reading omens in the behaviour of birds, noted in the *Life of Gregory* (Higham & Ryan 2013: 150), and it is possible that this bird was connected to the funeral in the capacity of a particular omen, which, for the bird in question, was simply a matter of being in the wrong place at the wrong time.

5.5.2 Wild Mammals

Wild mammals are as infrequent in cremation cemeteries as the birds and dogs previously discussed, and are thus far entirely absent from inhumation cemeteries except as curated amulets. The only cremation cemeteries from which wild mammal bones have been recovered are those within the core cremation zone, and predominantly from large, early urnfield sites – Spong Hill, Illington, Field Dalling, Elsham and Cleatham. Due to the rarity of wild mammals and their specific distribution, examples from Sancton are included in this section.

The most common wild mammal recorded is the bear, although this is at least partly due to the fact that bears were one of the few species specifically identified by the analyst at Elsham Wolds and Cleatham, where other mammals were not included. A full analysis of this material will no doubt increase the numbers of other wild mammals from these sites. Two sites have yielded evidence of deer bone - while deer antler is more common, this is discussed as curated bone (Section 5.7). Other fur-bearing animals (fox, beaver, and hare) are represented in a handful of cases, and a few instances of intrusive or incidental animals (hedgehog, rodents, moles) are also recorded.

5.5.2.1 Deer

While antler has been found at many cremation cemeteries, deer bone has only been found in three cremations, one from Lakenheath, Suffolk and two from Field Dalling, Norfolk. At Lakenheath, cremation 969 yielded one fragment of red deer mandible, alongside horse and pig bone. The cremation is of an adolescent or adult of uncertain age, but like many of the Lakenheath

Figure 5.3: Roe deer tibia from Field Dalling, Norfolk, with butchery mark which has subsequently warped with cremation. Photo: C. Rainsford.

cremations is unurned and predominantly comprised of animal bone, suggesting possibly this was an accessory cremation with the majority of the human bone buried elsewhere (McKinley forthcoming). At Field Dalling, cremations 161 and 92 included elements of roe deer. In cremation 161, the left foreleg and right hindleg are represented, with a substantial chop mark on the lower right tibia attesting to the fact that this animal was butchered before cremation (Figure 5.3). In cremation 92, the roe deer is represented by a single left radius, again with a butchery mark on the distal end. In neither cremation was any other animal present. Unfortunately, no information is currently available on the age or sex of humans from the Field Dalling cemetery.

It is clear at Field Dalling that the treatment of the roe deer parallels that of sheep and pigs at other cemeteries, in that the animals were butchered and one or more portions were included on the cremation pyre. At Lakenheath, the one fragment of red deer mandible provides far less indication of what was placed on the pyre, and could arguably represent either curated or freshly-caught animal. While the apparent rarity of the practice may arguably be to do with the difficulties of identifying deer in cremated material, currently the only clear evidence for deer being hunted as part of mortuary rites derives from Field Dalling. Geographically, Field Dalling is the most northerly of the cremation cemeteries in Norfolk, although still within 15 miles of Spong Hill, indicating that if this is a local custom, it is one which is highly localised. The presence of red deer mandible at Lakenheath indicates the possibility of other rites involving deer, specific to other cemeteries and other places.

5.5.2.2 Other mammals

Other intentional inclusions identified from cremation cemeteries are few, and restricted to the largest cemeteries. At Spong Hill, fox, hare and beaver have been identified; fox has also been identified from Sancton, and a possible hare from Cleatham. As with other wild mammals, they are exclusively found in adolescent and adult graves, with the exception of the possible hare from Cleatham, which is with a child. Minimal information is available on the sex of graves. At Spong Hill, as with other wild mammals, they occur slightly more often in multiple animal graves than singly.

Hare, beaver and fox share in common that they are fur-bearing mammals. Skins and pelts in cremations are invisible unless bones are left in the skin, as with bear skins (see below), while inhumations may occasionally preserve textile fragments. Walton Rogers in her survey of textiles from Anglo-Saxon graves lists 30 examples of animal skins, representing scabbard linings, garment trimmings and linings, and grave coverings (Walton-Rogers 2007). In most cases the species from which the skin derived cannot be discerned, but those which could include sheepskin, hare or rabbit, and deerskin. At Sutton Hoo, exceptionally, furs of both otter and beaver could be distinguished – otter in the clothing, and several beaver skins making a case for a lyre (Walton-Rogers 2007; Carver 2005).

While there is clearly evidence for the inclusion of furs in burials, neither the hare nor the beaver elements in cremations are consistent with their deriving from furs, and the evidence from fox remains is ambiguous. At Spong Hill, the hare is represented by upper leg elements and vertebrae, and the beaver by a humerus, indicating the inclusion either of a whole animal, or of selected meat portions. As the evidence from Sutton Hoo and from the curated bones indicates, beavers were used in this period both for their furs and their teeth, but Coles (2010) suggests multiple other products for which beavers may be exploited, including their meat (equal in weight to a roe deer) and castoreum sacs, which are mentioned in Classical medical texts and may therefore have been employed in remedies. Hares, similarly, have commonly been exploited for both fur and meat.

The use of foxes in Anglo-Saxon England is more ambiguous, with elements of fox rarely identified from settlement sites and no evident tradition of their consumption, although placename evidence suggests they were regularly encountered within the landscape (Poole 2015b). Within the eastern England dataset, fox has only been identified from five cremations at Spong Hill, of which four are “probable” identifications and only one – C2323 – is positively identified to fox on morphological grounds (Bond 1994). All five cremations contain elements only from the head area, four of which are mandibles and one of which is an atlas vertebra. These inclusions are generally described as representing furs with the mask left intact (e.g. Poole 2015b), although if this was the case more cranial material than just the mandible might be expected within the cremation, and the remaining atlas vertebra is also difficult to explain. In addition, two of the cremations containing mandibles – 2323 and 2890 – also contained "dog-size" material within the cremation, specifically ribs (2323) and hindleg elements (2890). Under the Occam's Razor system (Chapter 4), these should also be attributed to fox, suggesting that these animals may have been more complete than the identified material initially suggests.

It is clear that while hunting was limited and apparently contributed very little by way of meat to the diet in the early Anglo-Saxon period, it was not entirely unknown. The animals which occur in graves – deer, beavers, foxes and hares – were animals which were used to provide raw materials such as furs and antler, as well as meat and potentially medicines. Their presence in graves is exceptional, reflecting the limited appearance of these animals in settlement contexts, and they were clearly only included with specific people or under specific circumstances. Considering that the hunting of these animals would require specific knowledge of the animals and landscape as well as a particular skill set, it is possible to argue that the people buried with these animals were those who had the skills and the knowledge to hunt them during their lifetime. There remains, however, an elision between wild animals caught specifically for the funeral and those representing curated bone (amulets or furs), with it often difficult to tell from the sparse evidence what is represented. The sparse evidence from inhumations is also a salutary reminder that many wild animals – such as beaver and otter – may have been present as furs on the pyre, and therefore entirely invisible in the cremations.

5.5.2.3 Bears

There are 20 examples of cremations containing bear bones in Eastern England, all of which are within the core cremation zone and within the largest of the cremation cemeteries – Spong Hill, Elsham Wolds and Cleatham. Without exception, the only elements identified in these cremations are third phalanges, in some cases in groups of up to ten. All examples from the cremations are found with adult burials, with the exception of two from Cleatham found with adolescents (one of which is an uncertain identification of bear) and one, again from Cleatham, found with a juvenile (again, identified uncertainly as bear). Minimal sex data is available, but examples from Elsham Wolds occur with both male and female cremations. No remains of bear have been found from inhumation burials.

Six cremations from Spong Hill contain bear, all of which are with adults or adolescent/adults, and one of which is in the grave of a possible female. Four of the bears are in deposits with other animals, three of which follow a relatively standard pattern - one with a horse and two with horse and sheep ribs. The fourth, with the possible female, is a more atypical deposit with a possible fox and a fish. This cremation is also phased later (B/C) than the other cremations containing bear, which are in phase A/B. None of the cremations from either Spong Hill which contain bear remains have been noted to be especially wealthy in terms of other material goods (Bond & Worley 2006: 96).

In general, the collections of bear third phalanges have been interpreted as representing furs with the claws left intact. However, it is worth noting that this is an assumption, and other possibilities, such as that the claws were considered to have amuletic properties and were curated in their own right, should also be considered (Grimm 2013). Bear fur is also dense and difficult to burn on a cremation pyre, and if wrapped around or under the corpse inhibits the burning of the body (Grimm 2013), although there is nothing to stop it being placed elsewhere on the pyre (McKinley 1994). Whether or not they represent skins, bear remains are generally considered to have been imported to Britain from the Continent. The European brown bear is thought to have been approaching extinction in Britain by the 5th and 6th centuries

AD, with one cervical vertebra from Kinsey Cave in Yorkshire dated to this period accepted as the last evidence of indigenous bears in Britain (Hammon 2010). There is minimal evidence of bears from Anglo-Saxon settlements – one metacarpal was found from West Stow (Crabtree 1989), which is likely to have derived from a bear skin. While a few bears may have remained in remote locations, it is unlikely that there would have been regular encounters between living bears and humans in the early Anglo-Saxon period.

The evidence for trade in bear remains, and for their use in mortuary context, is substantially greater in other areas of Europe, particularly in Scandinavia at the same period. The survey by Grimm (2013) reports approximately 400 examples of bear remains from graves from Norway and Sweden, comprising up to 5% of burials in some areas. These are predominantly cremated bear claws found within cremated material, although a few examples are also recorded of skins in inhumations or wrapping high-status cremations, and some of bear tooth or claw amulets. The numbers and concentration of bear skins in burials drops in Continental Europe, with only 100 examples reported from burials from the Roman period and the Migration period together (Grimm 2013). The demographics of these burials are similar to those from England, in that bear remains occur predominantly in adult burials of both sexes. As with the English examples, bear remains are most commonly found in graves dating to the 6th century and earlier on the Continent, with the tradition enduring later in Scandinavia (Grimm 2013).

It is clear that Anglo-Saxon England was at the fringes of the trade in and use of bear remains, which was centred on Scandinavia, corresponding to the habitats where bears are most commonly found and where people would have had most direct interaction with the animals. A range of interactions with bears are present in later Scandinavian literature, including shamanistic beliefs involving warriors transforming into bears, from which the “berserker” originates (Hedeager 2011), as well as evidence of bear hunting as an elite pursuit (Oehrl 2013). Bears were still present in the woods of Continental Europe, although they appear less cosmologically significant than in contemporary Scandinavia, with neither Europe nor England so far producing any examples of perforated bear teeth or claws which could be considered amulets. While the skins or claws were clearly traded to Anglo-Saxon England, it is difficult to say what beliefs about bears and their properties were traded with them, to communities whose direct experience of these animals would have been minimal. However, the very fact that bear remains were brought to England, albeit in small quantities, suggests that they had some importance, if only to a small proportion of the population.

5.5.3 Fish

Only four examples of fish bone are recorded in the dataset, of which two are curated bone from the Marina Drive inhumation cemetery, and are discussed therefore in Section 5.7. The remaining two examples are both from cremation cemeteries – one from the grave of a possible adult female from Spong Hill; and one with an unsexed adolescent from Elsham Wolds. In neither case is the fish bone identified to species.

The scarcity of fish bone is partly attributable to the fragility of cremated fish bone, which is likely to have led both to poor preservation and poor identifiability. However, the lack of fish bone in inhumations suggests a genuine absence of fish bone as a mortuary deposit in most circumstances. Fishing in the early Anglo-Saxon period was relatively limited and focused around local resources (Banham 2004; Holmes 2014), and isotopic evidence also indicates that fish made a relatively small contribution to diet (Mays & Beavan 2012). The cremation at Spong Hill which contained fish bone also contained a bear skin and a possible fox, making it unique in being a multiple animal deposit containing exclusively hunted species. Like other wild animals, fish were clearly considered appropriate mortuary offerings only in exceptional circumstances.

5.5.4 Unintended animals

A small number of graves, both cremation and inhumation, contain animals which are clearly either intrusive or unintentional deposits. These include rodents and burrowing animals such as moles and rabbit (which was not introduced to Britain until the 11th century (Sykes & Curl 2010)). In most cases these are clearly intrusive and can provide no information regarding mortuary ritual.

The exception to this is one hedgehog metacarpal from cremation 2121 at Spong Hill, which was previously identified as “bird” (see Appendix 5). This was burnt in the same degree as the rest of the bone from this cremation, and was the only animal bone present in the cremation of an older adolescent. While consumption of baked hedgehog is recorded in traveller communities in post-medieval England (McEvoy 1938), there is no evidence to suggest significant consumption of hedgehog at Anglo-Saxon settlement sites, and therefore this makes for a relatively unconvincing deliberate deposit. Instead, hedgehogs hibernate in the autumn in large, loosely-stacked piles of leaves or wood, and it is likely that a cremation pyre would have made an attractive location. If this is the case, it would suggest both that this cremation pyre was built ahead of time and left unattended for at least the duration of a night, and also that this cremation occurred in the autumn/winter, at a point when hedgehogs were looking for somewhere to hibernate. That this is the only example of a bonfired hedgehog from a substantial dataset indicates the rarity both of the circumstances which led to its immolation and the subsequent collection of the bones from the pyre site.

5.5.5 Summary

The inclusion of wild birds, wild mammals and fish in graves is uncommon, and limited primarily to a small number of cremation graves. It is possible that many of these animals are under-represented in cremations, either through being used invisibly as furs, or simply due to the difficulties associated with identification of cremated material. In general, wild animals are included only with adults. They fall into two separate categories – curated bone, such as furs and arguably the duck wing from Oakington, which are used as display or decoration, and may have been possessions; and those animals which would have to be caught especially for the funeral. This hunting element implies extended funeral preparations, which may go some way towards explaining their rarity. The low prevalence of wild animals in burials is not exclusive to Anglo-Saxon England, with the same patterns reflected in Roman cremations, despite the existence of an elite hunting culture (Philpott 1991). Unlike domestic animals, wild animals are unpredictable and uncontrollable at a funeral and are unlikely to be considered as anyone's property, making them less attractive for inclusion in funeral rites. Considering as well the relatively small role of hunting in the early Anglo-Saxon period, it is clear that only certain people and circumstances merit this effort.

It has been suggested that the lack of hunting culture in early Anglo-Saxon England is due to animistic beliefs and a reverence for the wild which precludes substantial hunting (Sykes 2011). It is worth noting, however, that many local wild animals included in burials – hares, foxes, badgers, ducks – are rare in art or as amulets and do not appear to play important roles in cosmology. Instead, they are associated with landscape, and are used to define a sense of place (Poole 2015b). While they would have been encountered in the areas outside settlements, over the course of the normal farming year, it is likely that the skills and knowledge associated with tracking and capturing these animals will have been restricted to only some members of the community. Animals such as deer, beaver, hare and fox, and wild water birds, would have been animals of specific places and particular extra-local landscapes, and animistic beliefs associated with these animals would also have been rooted in this sense of place and in the behaviours of the animals in question.

5.6 Absent Animals

While many animals are absent from burials contingent on rite, cemetery or region, some animals which would have featured in Anglo-Saxon life are not included in any form of mortuary context in the study area. These absent animals may be as informative as the animals which are present in terms of Anglo-Saxon worldview and mortuary beliefs.

Perhaps the most significant absence is that of the cat. Cats occur infrequently on settlement sites in the Anglo-Saxon period, and while they are certainly for the most part domestic cats (*Felis catus*), the nature of their relationship to humans is uncertain. Poole (2015a) has suggested a variety of different attitudes and relationships co-existed between cats and humans, depending on the nature of both the cat and the human in question, and the circumstances of the relationship. In the later Anglo-Saxon period, textual sources suggest that cats could be valued animals for their ability as mousers, but could also be valued for more personal attributes, such as their ability to purr (Poole 2015a). However, evidence from sites including West Stow (Crabtree 1989) also indicates that cats were skinned for their fur. Cats are included in grave deposits elsewhere in Europe, including in Scandinavian cremations (Jennbert 2006: 137), demonstrating that this absence is not widespread. As fur-bearing animals, cats may have been included in cremations or inhumations as furs, which are now invisible archaeologically. As animals, the absence of cats can possibly be attributed to their role as commensal animals. Unlike horses and dogs, cats were not in direct working relationships with humans, and famously remain more independent than the pack-oriented dogs, making it less likely that a cat would be considered either entangled property, or even property *per se.* It is arguable that cats were viewed more as part of the local environment than as part of a relationship with other humans, thus making them unlikely candidates for inclusion in burials.

With a few exceptions, other animals whose main role in human perception was to define a sense of place and landscape, are also either excluded or minimally represented in burials. These include most wild birds – with the exception of the small passerine discussed from Spong Hill – rodents, amphibians, and other microfauna. Of the larger local wildlife, fox, beaver, hare and deer are represented, but badgers are absent and otter is represented only by a fur from Sutton Hoo. Badgers, like other wildlife, are found infrequently from Anglo-Saxon settlements (Holmes 2014). Badgers are regularly associated with landscape features in place names of Anglo-Saxon derivation (Poole 2015b), suggesting that they may be recognised but are predominantly associated with their natural habitats. Badgers, like smaller wildlife, may have been too remote from human relationships to be considered an appropriate grave good.

On the other end of the spectrum, several animals which have been suggested to have played a significant role in Anglo-Saxon mythology are also notably absent from burials. The problem of wolves has been discussed in Section 5.4, but there are as yet no confirmed instances of wolf remains in any burial within the dataset, despite the continuing presence of wolves within the British landscape. Similarly, corvids (genus *Corvus,* including crows, ravens, rooks and jackdaws) are regularly mentioned within poetry of the period in association with wolves, or as birds of the battlefield (Heaney 1999; Pluskowski 2010). Ravens hold a distinct place in Norse mythology as the messengers of Odin, who is often depicted with his two ravens, Hugin and Munin, who flew far and wide to bring him news (Hedegar 2011; Lancelyn Green 1960). Despite this, no corvids have been recovered from graves within Eastern England, and only one is known from elsewhere in the country (Butler's Field (Boyle et al. 1998), see Chapter 6). The associations of corvids as battlefield scavengers are negative, and even today corvids are considered by many farmers in a negative light due to their habits of scavenging the carcasses of stillborn or dead livestock (e.g. Rebanks 2015). It is possible that the associations of corvids with death, battle and perhaps the gods made these birds too perilous for the grave.

More heavily than any specific animal, Anglo-Saxon art and mythology feature imaginary beasts, including the *wyrm* – a category which covers both snakes and dragons (Clark Hall 1960:427). Twining snakes are the predominant feature of Sahlin's Style II art, while the dragon is one of the major actors within the Beowulf poem. There are few native species of snake in Britain, and none appear to have played any role in Anglo-Saxon life, indicating that the Anglo-Saxon *wyrm* was a broadly imaginary animal. Like corvids, wolves and birds of prey, these animals were fundamental to cosmology but of minor real importance in the everyday business of living and dying.

5.7 Curated Bone

Curated animal bone occupies a problematic position in between the categories of faunal remains and artefact. They form a class of faunal remains within cemeteries which is distinct from other animal bone and follows a distinct pathway to the grave, in that most of these would have been objects owned by the deceased and not requiring transformation through sacrifice before their inclusion. What constitutes a curated bone is defined in Chapter 4, but it can be reiterated here that these bones retain their original form, often (although not always) reference the animal from which they came, and appear to have no obvious function. Many of these curated bones have been described as “amulets” (e.g. Meaney 1981), although the more neutral “curated bone” is preferred here*.* Amulets are defined as objects which are used to protect the owner from harm, while talismans are similar objects which bring some benefit to the owner. Later records suggest Anglo-Saxon cosmology and medicine recognised both amuletic and talismanic objects (Jolly 1996).

Table 5.24 shows the number and type of curated bone artefacts recorded from sites in the eastern England dataset. As ever, the dataset is heavily weighted towards information recovered from cremation cemeteries. Of the 31 total inclusions of curated bone, only five examples have been found from inhumations, with the other 26 found with cremations, predominately cremations from Spong Hill. The low incidence of curated bone from inhumations presents problems in analysis and in comparing the data from inhumations and cremations, particularly since the category “curated bone” covers a diverse range of different artefacts and taxa. For these reasons, in addition to the standard dataset used throughout the study, data on curated bone was also collected from summaries published by Meaney (1981), Wilson (1992) and Lucy (2000). The majority of examples from these derive from inhumation rather than cremation burials, and also from a geographical range greater than the Eastern England dataset. Any regional variations within this dataset are discussed in Chapter 6. Data is also included from before the 1960 cut-off point. While it is considered important to take advantage of these records in a relatively sparse dataset, the possibility of inaccuracy, particularly in human age and sex data, should be recalled. This is not intended as a comprehensive catalogue of curated animal bone, and it is likely that there are further examples from sites which have gone unrecorded.

Type	Inhumation	Cremation
Perforated / mounted tooth	5	
Perforated carpal / tarsal		6
Astragalus manuport		21
Astragalus group		7
Unworked antler		13

Table 5.24: Curated bone from Eastern England dataset

5.7.1 Results

A total of 63 examples of curated bone were present in the expanded dataset, comprising 31 from the Eastern England dataset, and 32 from published summaries. These can be divided into several categories (Table 5.25): perforated or mounted teeth; perforated third phalanx; perforated fish vertebra; perforated tarsals / carpals / unidentified bone; groups of astragali; single astragali; and unworked deer antler. Unworked deer antler, while not technically necessarily curated, has been included as curated bone for the purposes of this discussion as it appears to be occupying a role distinct from other post-cranial deer bone, which bears some similarities to the symbolic roles played by other curated bone. Each category is associated with particular taxa, and each has distinct attributes as to where and how it is included in burial, suggesting different roles for each of these categories of artefact. However, they all share the characteristic of extremely low prevalence, with curated bone comprising less than 4% of all animal inclusions in the eastern England dataset.

		Eastern England		Summaries	
		Inhumation	Cremation	Inhumation	Cremation
Perforated / mounted tooth	Beaver			9	
	Pig	2		6	
	Pig / beaver	1			
	Canid	2		6	
	carnivore		1	1	
	Horse			1	
Perforated phalanx 3	Bird of prey		2	1	
	carnivore			1	
	unknown			1	
Perforated vertebrae	Fish			2	
Perforated carpal / tarsal	Pig		4		
	Cattle		1		
	Unid		1	2	
Astragalus manuport	Sheep		17		
	Pig		3		
	Dog		1		
Astragalus group	Sheep		6		
	sheep / deer		1		
Unworked antler	red deer		4		
	roe deer		2		
	deer unspec.		7		1

Table 5.25: Curated bone from Eastern England dataset and published summaries (Meaney (1981), Wilson (1992) and Lucy (2000)).

5.7.1.1 Perforated / mounted bone – claws and teeth

There are 33 instances of perforated or mounted third phalanges or teeth in the dataset, accounting for almost half the entire number of curated bones. The species represented include pig, beaver, canid, horse, and bird of prey (see Table 5.25), along with some which cannot be identified more precisely to taxon.

5.7.1.1.1 Pig and beaver teeth

Pigs are represented by perforated or mounted canines, and beaver incisors similarly are either perforated or mounted. In total, 18 examples are recorded in the dataset, all from inhumation cemeteries. Where dated, the distribution appears to be relatively late, with the earliest examples of both dated to the

6th century and the latest to the 7th century. The distribution of these is widespread, with both recorded from a wide range of cemeteries in both the east and the west of the country (Table 5.26).

Pig	Beaver
Wiltshire	Gloucestershire
Somerset	Oxfordshire
Oxfordshire	Bedfordshire
Kent	Derbyshire
Suffolk	Warwickshire
Yorkshire	Lincolnshire
	Cambridgeshire

Table 5.26: Counties from which perforated pig or beaver teeth have been recorded in burials.

Beaver teeth have been previously noted to be more associated with females than males, and the dataset appears to tentatively confirm this. Of nine examples with an obvious association with a person, the majority were unsexed (five out of nine). Three were with females, and only one example has been found with a possible male, an adolescent from a triple grave from Ducklington, Oxfordshire (Meaney 1981). Similarly, of the pig teeth, seven were recovered from female burials, and only one from a male burial, this time a tooth described only as "worked" from a 6th century burial in Stowting, Kent. Additionally, the uncertain pig / beaver tooth from Castledyke South was also with a female (Nicholson 1998: 239). Three of the beaver teeth derive from the graves of juveniles – both examples from Marina Drive, Bedfordshire were from the graves of young children, one about 8 years old and one only 8 months; the other example is the adolescent male from Ducklington (Meaney 1981). Three of the pig teeth are also found with juveniles – one from Lakenheath was from the grave of a 10-14 year old female, one from Butler's Field, Gloucestershire with an 11-12 year old, and one Wheatley, Oxfordshire was found in the grave of a 5-6 year old, although since it derived from the grave fill the association is uncertain. Adult ages are not always given in the literature, but at least three of the pig teeth derived from adult graves.

Location within grave is recorded for five of the beaver teeth, and all are located in the area of the head, torso or upper arms, with the strong implication that these were worn as pendants. By contrast, the location is known for four of the pig teeth – one is located by the feet, two are in bundles or containers with other objects / amulets, and the final one is in the area of the waist/hips, again associated with other objects. This would appear to suggest that while beaver teeth have at least a partial decorative function, pig teeth are more important as apotropaic objects – charms which help the bearer to be lucky by averting evil influences or bad luck. This conclusion is supported by the fact that while only one pig tooth has been mounted in metal (bronze, Londesborough, Yorkshire), six of the beaver teeth are mounted, most in bronze but two in gold (Wigber Low, Derbyshire; Castle Bytham, Lincolnshire).

Image removed for copyright reasons.

Figure 5.4: Benty Grange helmet, showing detail of boar crest. Photos: Weston Park Museum.

While pig canines and beaver incisors are at first glance very different teeth in terms of animal and function, in gross morphology they are in fact similar, in that both are robust, long teeth with a curve to them. Their morphology is in fact sufficiently close that one example, from Castledyke South, could only be identified as pig / beaver (Nicholson 1998: 239). Pigs and wild boar are a frequent motif in Anglo-Saxon art, occurring as figural representations on male and female jewellery and on weapons (Pluskowski 2010). Boars are present on the Sutton Hoo helmet and the helmet from Benty Grange, Derbyshire (Figure 5.4), and similar helmets with boar imagery are described in *Beowulf* with the clear implication that the image conveys apotropaic qualities of protection in battle (Pluskowski 2010: 113). Defensive ferocity is characteristic of the living animal, with wild pigs fighting fiercely when cornered, making them a challenge to hunt. Pigs are also discussed as symbols of fertility (e.g. Glosecki 2000, Pluskowski 2010), which is again reflected in the living animal, as pigs may produce large litters on a regular basis. However, the fertility association seems to derive specifically from an association with the Norse fertility goddess Freyr, who rode a boar called Gullinbursti (Glosecki 2000) and whether therefore this is relevant for early Anglo-Saxon England is therefore arguable.

In contrast, there are no depictions of beavers in Anglo-Saxon artwork. Association with them would have been infrequent but not unknown, as they are native to Britain and there is evidence that they were trapped or hunted at this time, with the Sutton Hoo lyre case made of beaver fur (Coles 2010; Walton-Rogers 2007). The use of beaver teeth as amulets, however, seems perplexing. Meaney (1981) suggested that they may have been associated with strong, healthy teeth, on the basis of the beavers' frequent use of their teeth to fell wood and build dams. However, a number of these amulets are mounted in gold, potentially suggesting a worth beyond that of a charm for good dentistry. Most recorded medicinal charms seem to be focused on cure rather than prevention, and are relatively ephemeral in materials and practice (Meaney 1981; Jolly 1996).

While pig teeth and beaver teeth both occur in some cemeteries (e.g. Butler's Field), there are no instances of them co-occurring in the same grave. While both are distributed across the 6th and 7th centuries, more of the pig teeth are recorded from 6th century contexts, while the majority of the beaver teeth are from the 7th century. On the basis of their morphological similarity, it is possible to suggest that beaver teeth were considered as analogous to pig canines in terms of apotropaic function. In an animistic culture where attributes of the animal were transferred to their body parts, pig teeth could hold protective or fertility associations. By the seventh century, Christianity was introduced and had begun to make an impact on local beliefs. It is possible that, divorced from the original animistic context, beaver teeth were considered to have the same properties as pig teeth and grew in popularity, at the same time as the way they were displayed changed. The gift of these amulets to younger children in particular would appear to suggest some form of protective property.

5.7.1.1.2 Other perforated teeth / claws

After the beaver and pig teeth, the most common perforated amulets are teeth and claws from predatory mammals and birds. Among the mammals, seven canid teeth are recorded from inhumation burials, as well as one tooth not identified further than "carnivore", and one third phalanx also identified as carnivore. Two of the canid teeth have been identified as dog, and one as dog / fox, while the rest are not identified to species. None so far has been positively identified as wolf. All the teeth are perforated, and three examples have some metallic fixings. Five out of the seven teeth are in female graves, and the single carnivore tooth and third phalanx are also associated with females. Only one of the canid teeth is associated with a juvenile – a perforated tooth in the grave of a 2-6 year old child from Lyminge, Kent (Meaney 1981). Temporal distribution is relatively wide, with examples dating as early as the 5th/6th century and as late as the 7th century. Location within the grave varies, with some clearly being used as pendants, sometimes in swags with other beads, and some found at the waist or in bundles with other amulets.

Third phalanges of birds of prey present an interesting contrast, as the only category of perforated amulet to be found in cremations as well as inhumations. As with the canid teeth, these have rarely been identified beyond "bird of prey". Of those which have, one from a cremation at Elsham has been identified as osprey (*Pandion haliaetus*), and one from Alfriston, Sussex has been identified as white-tailed eagle (*Haliaeetus albicilla*) – both among the larger birds of prey common in the British Isles. Again, there is an association of these amulets with females. Only two out of the four examples were in graves which could be assigned sex, and both of these were with females. No examples are known dating later than the 6th century.

Interestingly, a second grave at Alfriston yielded a pendant "cut from bone to represent a talon" (Meaney 1981: 142-144), apparently in imitation of genuine claw amulets. It is possible to read this in several ways. Firstly, it can be taken as an indication of the difficulty in obtaining third phalanges from large birds of prey – while occasionally encountered, there is little evidence for them being systematically hunted. Its perceived use as an amulet is harder to answer. If the properties of amulets were derived from the attributes of the animals from which they came, this amulet must have been a fake for which the owner had no idea of its provenance. However, if – as has been argued for the beaver and pig teeth – the outward morphology of an amulet was relevant to its function, this may have been considered a perfectly adequate substitute in a pinch for claws which were difficult to obtain.

There are only two examples of perforated horse teeth in the dataset. One, from Castle Bytham, Lincolnshire is included in the same grave as a mounted beaver tooth, and is described as having been worked ("rubbed down"), suggesting it may have initially been a gaming piece (Meaney 1981). The other derives from a burial from the 7th-9th century cemetery at Nazeingbury, Essex (Huggins 1978). It is suggested that this was used as a pendant, and was buried with an adult female without other grave goods. The cemetery at Nazeingbury is associated with a church building, and has been interpreted as the cemetery of a nunnery or hospice (Huggins 1978). Although burial 64, from which the horse tooth pendant derives, is undated, it is clear from the stratigraphy that it is from a late phase of the cemetery. It is possible that this represents a late development of ritual associated with horses, which appears to have continued in some form following the ostensible Christianisation of Britain (see Section 5.2.3). However, the use of worked horse teeth elsewhere as gaming pieces (e.g. Geake 1997) might indicate a more individual or personal choice behind its inclusion.

5.7.1.1.3 Other perforated bones

Two examples of perforated fish vertebrae have been found from the Marina Drive cemetery, Bedfordshire. Both date to the seventh century, and both are part of bead necklaces in child graves. The uniqueness of these finds makes it difficult to draw conclusions regarding their amuletic properties. Fish were depicted in Anglo-Saxon art, including on the Lullingstone bowl (Hicks 1993: 26) but the use of the vertebrae within necklaces may suggest that these were just decorative beads. Despite its name, Marina Drive has no connection to the sea or major waterways.

Seven examples have also been recovered of perforated tarsal or carpal bones. Four from Spong Hill have been identified as pig, three of which have been identified positively as carpals and two which have been identified as ulnar carpals. Of the three examples not from Spong Hill, one cremated carpal/tarsal from Cleatham has so far not been identified to species; the example reported from the inhumation cemetery at Blewburton, Berkshire is described only as an unidentified fragment of bone on a bronze ring; and one from the inhumation cemetery at Kingston, Kent, is tentatively identified as a sheep patella, which was also "strung upon brass ringle" (Meaney 1981: 145). These bones all have in common that they are small, dense bones from domestic mammals which have no obvious decorative or associative function. The two examples from inhumation burials are unfortunately lacking information on location within grave. All five cremated examples are from adult graves, and at Spong Hill two of the examples are associated with females and one with a male. While the inhumation data needs to be treated cautiously, the burial from Blewburton was also identified as male. These bones appear therefore to be less strongly associated with females and juveniles than other categories of amulet.

One obvious suggestion for function is that these curated bones may be amulets associated with medical purposes – they are "neither beautiful nor useful" (Meaney 1981: 145), nor do they provide a strong visual reference to predatory animals, and one modern comparandum is that sheep astragali were believed in the nineteenth century to prevent cramp (Meaney 1981: 145). Of the four Spong Hill burials, two had some form of pathology recorded – one female with osteoarthritis (1724) and one mature adult with osteoporosis (2439). However, pathology was recorded in approximately 25% of all individuals from Spong Hill, while these amulets were utilised in 0.1% of burials, half of which did not have pathology evident on the bones. While many pathologies do not affect bone, it can still be said that if these were curing amulets, their use was both infrequent, highly specific and apparently ineffective. The specificity of the bone used at Spong Hill – pig ulnar carpal – and the fact that this is not apparently replicated in other cemeteries might also suggest a degree of regionality in belief and practice. If these bones were considered by some healers to have healing or talismanic properties, which particular bone and how it needed to be used may have varied with region or individual authority.

5.7.1.2 Astragalus Groups / Manuports

There are seven instances in the dataset of groups of unworked astragali included in burials. All are from large cremation cemeteries – three from Spong Hill, three from Elsham and one from Caistor-by-Norwich. They consist predominantly of sheep astragali. The groups from Spong Hill range in size from nine to 17 astragali, while the groups from Elsham are not yet quantified. The group from Caistor-by-Norwich is exceptional both for its size (35 astragali), that two of the astragali were identified as roe deer rather than the more usual sheep, and that one of the roe deer astragali was engraved with runes (see below). The astragali from Caistor-by-Norwich and one of the cremations from Spong Hill are noted to show signs of wear, indicating regular handling and long-term curation prior to burial. The logistics alone of acquiring astragali from a minimum of 18 animals (in the case of Caistor-by-Norwich) suggests that these groups must have been accumulated over a period of months if not years.

In addition to these, there are numerous cases of single astragali found from cremation burials without the rest of the animal attached. Most of these derive either from sheep or from pigs, but one example from Spong Hill derives from a dog, and shows evidence of working (Bond 1994). The difficulty of identifying these single astragali positively as manuports (bones which have been curated and handled as objects over a period of time without modification) has been discussed by Bond (1994) for Spong Hill, who concludes that a final number of these manuports cannot be given. One sheep astragalus from Spong Hill and one pig astragalus from Tranmer House can be identified positively as manuports due to wear on the edges of the bone. However, another 16 sheep astragali and two pig astragali from

Spong Hill are possible candidates for manuports, as they represent examples of single or pairs of astragali with no other associated bone from the appendicular skeleton in the cremation. A distinct side preference exists within these astragali, with 12 recorded as right against only two recorded as left hand side (including both pig and sheep astragali), which suggests these may be more likely to be manuports. So far, these single manuports have only been identified from Spong Hill and Tranmer House. In particular, no examples have been identified from Illington or Field Dalling, suggesting that this is not inter-observer variability, but rather restriction to certain large or prestigious cemeteries.

One cattle carpal from Spong Hill was also identified as a potential manuport, on the basis of handling wear. Single elements of cattle are infrequent in cremations (10 instances at Spong Hill), and no other similar instances of single carpals are evident in the dataset.

Unlike many of the other curated bone classes discussed, astragalus groups appear to be predominantly associated with adults (two out of three at Spong Hill; three out of three at Elsham). Sex associations appear to be more mixed, with three examples from potentially male burials, and two from potentially female burials. A similar pattern is seen from the potential manuports from Spong Hill, with 17 of the 19 examples discussed above associated with adult burials. Few of the burials could be assigned sex, but of those which were, four were female and two were male. While caution must be exercised when dealing with sex in cremation burials, it appears that these manuports broadly were associated with adults of both sexes.

The discussion as to what astragali groups might represent has broadly focused around their use as either gaming pieces or in divination (Sykes 2014: 127-8; Russell 2012). There are multiple examples from both ethnography and archaeology of astragali, most often sheep/goat astragali, being used as dice (Russell 2012: 133-135), on account of their having four "faces" to the bone on which they could potentially fall. Bone and ivory gaming pieces are recurrent finds in Anglo-Saxon burials, both cremation and inhumation, with sets being recovered from Spong Hill, Sutton Hoo and

Prittlewell to name but a few examples. These are small hemispheres of bone which are likely to have been used in games akin to Viking *hnefatafl*. That their use is distinct from the sets of astragali is clear from cremation N59 from Caistor-by-Norwich, where a set of gaming pieces was recovered alongside a large group of sheep and deer astragali (although it should be noted that the astragali from this cremation have also been interpreted as gaming pieces (Sykes 2014: 128; Barnes 2012: 42)). The use of astragali, or at least their placement in mortuary contexts, appears to have been much more temporally and spatially restricted than that of gaming pieces, with the practice apparently confined to the large and early cremation cemeteries in the east of England.

Image removed for copyright reasons.

Figure 5.5: Roe deer astragalus inscribed with runes from Caistor-by-Norwich. From Myres & Green (1973).

While the most likely use for these astragali is in determining some form of chance, it is impossible to define whether there was a divination aspect to this, and Russell notes that groups of astragali found with burials are almost always ambiguous in terms of interpretation and function (2012: 137). The relative lack of astragali with juveniles indicates that these were not just toys, but held a greater significance. In addition, one of the roe deer astragali from N59, Caistor-by-Norwich was engraved with runes reading “raeʒhaen”, meaning “roe deer” in Old English (Page 1995) (Figure 5.5). The act of inscribing runes onto an object in the early medieval period has been argued to be an act of magical significance itself, as runes provided power of the forces of the world (Jolly 1996: 99). This may again add weight to the hypothesis that if these astragali were gaming pieces, these were games with some cosmological significance.

5.7.1.3 Unworked antler

Eleven instances of unworked antler have been recorded from the dataset, all from cremation cemeteries in the east of England. Examples are known from Spong Hill (7), Illington (2), Caistor-by-Norwich (1), Sutton Hoo (1), and Lackford (1). Both red deer and roe deer antler has been identified, and the unworked pieces are generally from the beam or tines of the antler. The roe deer antler identified from Illington is likely to have come from shed antlers, as they show resorption of bone from within the tines, which only occurs in antler which is shed or close to shedding. Antler is again predominantly found with adult cremations, with only two examples with juveniles from Spong Hill. Sex data is again sparse, but examples have been identified from both male and female cremations.

Antler was a material used regularly for making into artefacts – both highly shaped, such as combs, and less worked, such as antler or burr rings – which are regularly present in both inhumation and cremation graves. Red deer antler found in zooarchaeological assemblages is generally shed antler (Sykes 2011: 329), which would have been collected in the autumn or winter, before it had time to weather or be chewed by other animals. Antler would therefore have been a recognised and handled material, with times and seasons for collection and working.

Image removed for copyright reasons.

Figure 5.6: Cremation urn 2594 from Spong Hill, depicting deer being chased by dogs. From Hills et al. (1987).

The meaning of unworked antler, or whether it can be considered an apotropaic object, is difficult to discern. Like teeth and claws, antler is the most obvious element to symbolise deer, and stags in particular, and the exaggerated antlers on the stag topping the Sutton Hoo sceptre perhaps reflect this (Fletcher 2014: 120). Deer hunting, although rare on the basis of zooarchaeological evidence, was important enough imaginatively for a scene of deer being chased by dogs to be depicted on an urn from Spong Hill (Hicks 1993) (Figure 5.6). While deer were clearly not neutral in the Anglo-Saxon imagination, what they symbolised is harder to suggest. Antler is a common symbol cross-culturally of regeneration and new life as it is shed and grows back yearly (Fletcher 2014: 118), and it is possible that this was its implication in these cremations.

5.7.2 Summary

The category "curated bone", although definable as an entity, covers a substantial diversity of different bones from different taxa, and careful definition of these is required in order to discuss their uses and functions. From the foregoing, three distinct categories of curated bone can be distinguished. The first comprises perforated or mounted bones which visually reference the animals from which they came, and often appear to have served a decorative as well as apotropaic function. Many of the animals from which elements are used are predatory or otherwise dangerous animals (e.g. boars, canids, birds of prey) which are also commonly depicted in artwork and appear to have held a strong imaginative value in the early Anglo-Saxon period (Chapter 2). Beaver teeth are harder to explain in terms of attributes or the apparent value of the animal, but are perhaps linked by their morphology to pig canines. These may have served as protective amulets, the wearing of which served to transfer defensive attributes of the animal to the bearer. As with other forms of jewellery, they are found almost exclusively with females and juveniles, and similar types of amulets from the same range of species are found from across the country. While bird claws have been found from both cremations and inhumations, perforated and mounted teeth are predominantly associated with inhumations, although this could be due to the tendency of tooth crowns to shatter or to fragment from their roots during cremation. One perforated tooth root was found from cremation 1490 at Spong Hill, which could not be identified to species due to the lack of the rest of the tooth.

The second category is that of perforated carpal or tarsal bones of domestic animals which do not visually reference the animal from which they came. These are associated with adults of both sexes, and have been found from both inhumation and cremation burials. It is possible that these serve a healing or apotropaic function, based on specific beliefs not necessarily associated with attributes of a particular animal.

Unperforated carpals or tarsals which have nevertheless been curated as objects prior to burial also appear to form a distinct category of curated bone. These are predominantly astragali from sheep, roe deer or pigs, although examples of dog astragali and cattle carpals are also known. While they bear some similarities to gaming pieces – particularly the large groups of sheep and deer astragali found in a few cremations from Spong Hill and Caistor-by-Norwich – they may also have been associated with fortune telling or divination. These have been found so far only from cremation cemeteries within the Core Cremation Zone, and are associated with adults of both sexes. This therefore appears to represent a more localised practice than is demonstrated by other forms of curated bone. The association with cremations suggests additionally that the inclusion of astragali as a grave good is confined to the earlier part of the early Anglo-Saxon period, perhaps providing evidence of early beliefs. It is possible that they were superseded in function by other gaming pieces which continued to be included in burials, or if the practice of gaming and divination using astragali persisted, that this was no longer considered appropriate to reference in furnished burial.

Finally, the practice of including unworked antler in cremations cannot be easily attributed to any of the above categories, and remains difficult to interpret. It bears some similarities to the perforated teeth and claws discussed, in that it can be argued to be visually representative of an animal which may have some symbolic resonances. However, like the astragali, antler has so far only been found included in cremation burials from the Core Cremation Zone (including at Sancton, Yorkshire (Bond 1993)) and Suffolk, suggesting a similarly restricted practice. Whether unworked antler was technically “curated”, in that it was collected and had a function outside of its use in the mortuary rites, is uncertain. However, it is likely that unworked antler acted as a symbol of belief in a similar way to other curated bone, even if its symbolism may remain unclear.

6: Creating the Grave - Animals and Identity in Mortuary Ritual

Animal inclusions in graves are present via a complicated intersection of factors, from animal affordances and natures to human biographies. This chapter draws on the detailed taxonomic results of the previous chapter in order to explore the impacts of potential “human factors” on the inclusion of animals in mortuary rites. This starts by comparing evidence from cremation and inhumation cemeteries, to discuss the nature of the differences between these two rites. Subsequently, sources of variation are addressed from three angles: biological, geographic and chronological. Firstly, it is apparent that age and sex of the person buried impacts the animals which are appropriate for inclusion, but the nature and particularly the variability of these practices within the dataset is explored. Secondly, geographic variation in burial practice has recently garnered interest as potentially representing local variants of paganism (e.g. McCullough-French 2017), and variability within the eastern England dataset and between eastern England and other surveyed areas is explored. Finally, major changes within burial practice occurred in the mid-6th to 7th centuries, attributed to developing social structure and changing beliefs, and the impact of these on the inclusion of animals is discussed.

6.1 Equal Rites? Comparing Animal Use in Cremation and Inhumation

Cremation and inhumation are broadly contemporary rites in early Anglo-Saxon England. The reasons for preferring one rite or the other are unclear, as is the question of whether the same communities with the same cosmological understanding of the world used both rites, or whether the choice between inhumation and cremation practice was informed by different beliefs. It is clear from the foregoing discussion that there are differences in the use of animals in cremation and inhumation rites in Eastern England, most notably that of the much lower frequency with which animals were included in inhumation rites. This section summarises the information from

Eastern England and comparatively, from other regions of England, to compare the ways in which animals were employed in cremation and inhumation. In particular, the question to be asked is whether the use of animals is qualitatively different between cremation and inhumation rites, or whether inhumation can be characterised simply as a “dilute” or “poorer” version of the cremation rite.

6.1.1 Prevalence

The prevalence of animal inclusions in inhumation cemeteries has long been considered to be substantially lower than in cremation cemeteries (e.g. Filmer-Sankey & Pestell 2001), but due to the lack of systematic survey particularly of inhumation cemeteries, and the complexity of discerning deliberate inclusions from accidental inclusions in inhumations (Chapter 3), the difference has been difficult to quantify. As reported in the previous chapter, the overall proportion of cremation burials containing animal remains in the dataset is 44%. The prevalence at each cremation cemetery ranges between 1% (Mucking) and 75% (Lakenheath & Sutton Hoo) of burials containing animal bone, with most substantial and well-analysed cemeteries yielding animal bone from between 20% and 50% of cremations (Table 6.1). While there are some differences in prevalence according to taphonomy, cemetery size and region (see Chapter 3 and below, Section 6.3), this is also comparable to figures for cemetery sites in the Midlands (McCullough-French 2017). Not all cemeteries with cremations contained cremations with animal bone, although with the exception of Fonaby, all cemeteries with more than 10 cremations did contain at least one with animal bone. Fonaby, Lincolnshire, was excavated in the late 1950s and has not been subjected to high-quality recent analysis, indicating that animal bone is probably absent from these cremations for methodological reasons.

Cremation		Inhumation	
Site	Prevalence (%)	Site	Prevalence (%)
Overall	44.0	Overall	1.4
Lakenheath	75.0	Sutton Hoo	12.5
Sutton Hoo	75.0	Castledyke South	5.1
Tranmer House	69.2	Lakenheath	2.8
Spong Hill	46.4	Buttermarket	2.8
Elsham	45.2	Gunthorpe	2.7
Cleatham	38.9	Great Chesterford	2.5
Baston	25.0	Snape	2.1
Snape	23.5	Melbourne	1.8
Morningthorpe	22.2	Oakington	1.4
Illington	20.0	Springfield Lyons	0.7
Field Dalling	16.8		
Great Chesterford	15.2		
Rayleigh	7.0		
Mucking II	1.0		

Table 6.1: Prevalence of animal bone, by percentage of burials in cemetery containing animal bone, from cremation and inhumation cemeteries in Eastern England dataset.

By contrast, the overall prevalence of animal bone from inhumation burials across the dataset is only 1.4% (Table 6.1). While this has been affected by taphonomy, in particular the aggressive soil conditions present in much of the region, it is not entirely an artefact of taphonomy. The typical prevalence at cemeteries where animal bone inclusions are present is below 5%. This corresponds to a similar survey of the Kent region, where an overall proportion of 1.8% of all Anglo-Saxon burials surveyed contained animal offerings, and sites which contained animal inclusions rarely yielded them in more than 10% of burials (Sladen 2016). Perhaps consequently to the extremely low prevalences, not all inhumation sites in the Eastern England dataset contained animal inclusions, with only 27% (13 out of 48) of cemeteries with inhumations containing definite animal inclusions, although this has also been affected by taphonomy (Chapter 3; Chapter 5).

While preservation biases have affected the dataset, it is clear that animal inclusions are substantially more common in cremation burials than in inhumation burials. Furthermore, the indications are that this is a pattern which is not just confined to the “core cremation zone” (Hills & Lucy 2013) or even Eastern England more broadly, with similar frequencies in inhumation noted for Kent (Sladen 2016) and for cremation noted from the Midlands (McCullough-French 2017). If this is indeed a supra-regional pattern which cross-cuts local variation (see Section 6.3), the possibility is that infrequent inclusion of animal remains in inhumations – or their more frequent inclusion in cremations – is somehow intrinsic to the rites themselves. Cremation rites in general can be seen as requiring a more substantial sacrifice of organic wealth than most inhumations, if only in terms of the wood required in order to build the pyre (McKinley 2009). Where this amount of wood was considered appropriate, it is possible that the capacity for animals to be included was also greater. Alternatively, Williams has suggested that the more regular inclusion of animals in cremation rites may signal fundamental differences in eschatological beliefs between cremation and inhumation rites (Williams 2001; see also Chapter 2). The phenomenological aspects of cremation are very different to those of inhumation, and cremation may have offered different cosmological meaning, as a more powerfully transformative rite. While access to resources is an important enabling factor in the creation of large cremation funerals, differences in belief and practice are also likely to have played a key role in how these resources were spent.

6.1.2 Location and display of animals

How animals are included physically as part of cremation and inhumation graves may provide clues regarding the mortuary processes leading up to the “end-point” of the grave. Table 6.2 summarises the means by which animal bone is included in cremation and inhumation burials in the eastern England dataset. With few exceptions, cremation burials are associated with cremated animal bone, and inhumation burials are associated with unburnt animal remains.

Cremation	No.	Inhumation	No.
TOTAL	2197		54
Commingled in urn with human remains	2127	In grave with human remains	44
In separate "animal accessory" vessel	65	In separate but associated grave	2
As unburnt bone included with urn containing human remains	1	Placed in fill above inhumation	1
As separate unassociated deposit	4	As cremated bone associated with inhumation	2
		As separate unassociated deposit.	5

Table 6.2: Means of inclusion of animal bone in cremation and inhumation burials from eastern England.

The majority of animal bone found in cremations is present commingled with human remains in a single urn. Alternative locations for cremated animal bone are unurned but distributed within the cut containing an urn with human remains; or similarly within “animal accessory vessels” which contain primarily animal bone, but which can typically be associated with a human cremation urn in the near vicinity. Animal accessory vessels have so far only been identified in a handful of instances at some of the largest cemeteries, including Spong Hill, Sancton, Elsham Wolds and Cleatham. The typical explanation for these deposits is that animal offerings were cremated concurrently with their human, with the pyre site acting as the main locus of display. Animal bone was only placed in the cut or in an accessory vessel in cremations from which an exceptionally large quantity of bone was recovered from the pyre site, and is considered to be largely a practical measure (Bond 1994). The approximate locations of human compared to animal remains must have been known, if these were burnt on the same pyre, in order to facilitate later separation into different urns (McKinley 1994; Bond 1994). Few early Anglo-Saxon pyre sites have been identified, meaning that for the most part there is little evidence to suggest where these may have been located (Williams 2011: 248), opening the possibility that the urns could have been transported some distance to their eventual resting place.

The group of several unurned cremations from Lakenheath raise the uneasy possibility that in some cases only token amounts of animal bone may have been included in the eventual cremation deposits. Several of the cremations from Lakenheath appear to be large collections of cremated bone of multiple animals with small amounts of human bone, similar to the animal accessory deposits at other sites (McKinley forthcoming). In this case, however, it appears that the animal portion of the cremation has become physically separated from the human cremation, which may then have been transported elsewhere for burial (McKinley forthcoming). The inclusion of cremated animal remains from the burial pyre may therefore not have always been considered critical to eternal rest, an observation supported by the fact that animal remains – even of large animals such as horses – frequently make up only a minority of the remains in a cremation.

Finally, there is little evidence of any secondary ritual involving animals following that carried out at the pyre site. Unburnt bone is found within some cremations, but in most cases this appears to be either residual or included incidentally (see discussion in Field Dalling report, Appendix 3). The only example within the dataset of a portion of unburnt bone included with a cremation is from Caistor-by-Norwich, where F.R. Mann describes "portions of the ribs of a large animal [were] placed on the shoulder of one of the urns" (Myres & Green 1973: 119). However, the age of the excavation and the uniqueness of the deposit make this report uncertain, and with no way to verify it this must be considering as an intriguing, if unverified, possibility.

While the destroyed pyre site appears to have been the main focus of activity in the cremation rite, in inhumation burials the display is focused around the grave itself, which is preserved in the archaeological record. Animal offerings are for the most part placed unburnt in various locations around, under or atop the human body. There is a tendency, later in the period, for horse burials to be placed in separate but adjoining graves to their accompanying human (Fern 2007). There is little evidence of deposits having been placed in any container, with the exception of one meat offering from Sutton Hoo, which is thought to have been contained within a leather bag. Analysis of insect remains from Snape indicates that furnished graves may have remained open for some time (Filmer-Sankey & Pestell 2001), and while it is difficult to tell when in the process they were added to the palimpsest, animal offerings appear to have been an integral part of the final grave display. There is little evidence currently of animals added at any later stage than that of the grave tableau. One organic sand stain, thought to be of animal origin, located in the fill above a chamber grave at the Buttermarket cemetery, could hint at the possibility of a closing ritual in some graves. As a 7th century high-status grave this dates to late in the early Anglo-Saxon period, and even if genuine may not be typical. However, the possibility of Associated Bone Groups at higher stages in grave backfills is not something which should be overlooked, either on site or by later analysts.

There is scant evidence of cremated bone being included with inhumation graves, suggesting that there was little mixing of the two rites. Possible examples include Grave 11 at Snape, an inhumation burial with a distinct lens of cremated bone in the backfill (Filmer-Sankey & Pestell 2001); and Grave 38 at Morningthorpe, an inhumation grave surrounded by a ring ditch, from which cremated bone was recovered (Green et al. 1987). Unfortunately, no identifications could be made of any of the material from either of these deposits, and both could plausibly represent disturbed cremations which have been discretely reworked. A more intriguing deposit comes from the famous Mound 1 ship burial at Sutton Hoo, where among the multiple furnishings of the burial was included a deposit of cremated bone contained within a bag and placed on a tray in the grave (Carver 2005). This cremation has not been identified as either animal or human, and attempts to locate it as part of this project were unfortunately unsuccessful. However, it raises the possibility that late princely burials were including animals as part of referencing earlier traditions of cremation, as one means of legitimising power and authority (see Section 6.4).

Finally, cemeteries occasionally contain animal burials or partial animals which are apparently unassociated with any specific human burial. These have so far only been recorded at three sites in the dataset – Great

Chesterford, Springfield Lyons, and Oakington – all of which are cemeteries with substantial numbers of inhumation burials, although Springfield Lyons also includes a similar number of cremations. The animals represented are horses and dogs only. A deposit of a cow skull was recorded from the Soham cemetery in Cambridgeshire in the 1930s by Lethbridge (1933), but due to the date it was excavated the deposit was not dated and it is impossible to be certain it was Anglo-Saxon. The single dog burial from Great Chesterford and one of the Oakington horse burials are complete animals, but the other three horses – from Oakington, Great Chesterford and Springfield Lyons – appear to have been "closed" deliberately, either by decapitation or by burning of the harness (see Section 5.2). While these are burials located in predominantly inhumation cemeteries, they cannot be linked *per se* with the inhumation rite itself. Instead, they indicate these cemeteries as a focus of ritual activity, not all of which was directed towards forming a grave tableau. The current absence of any similar burials from predominantly cremation cemeteries is perhaps an indication that the sacrifice and display of animals on pyres was not typically located at these sites.

6.1.3 Species diversity and representation

Table 6.3 shows the taxa represented in cremation and inhumation burials in order of relative frequency. Horse and sheep/goat are the most common animals identified in both rites, although horse is the most frequent in cremations, while sheep/goat is the most frequent taxon in inhumations. However, sheep/goat is the most common inclusion at some of the smaller cremation cemeteries (see Section 5.1), and even in the larger cemeteries, it may in fact have been the most frequent original inclusion owing to the large numbers of rib portions which cannot be identified beyond "medium mammal" (see Section 5.2/5.3 for discussion). The different roles of the horse in cremation and inhumation rites has been discussed in Section 5.2 – in summary, horses are included more frequently and with a greater range of people in cremation burials than in inhumation burials, where they appear to be restricted to burials of high-status males, often with martial symbolism, as they are on the Continent (Fern 2007: 102). It is worth noting that while sheep/goat remains are the most abundant inclusions in inhumation burials, they derive from a relatively restricted number of cemeteries, whereas horses are represented in 10 burials across seven different cemeteries, indicating that they are not abundant but that they are the most frequent single taxon to be present. While this could be attributed to the visibility of horse remains compared to other taxa, the cemeteries assessed have been recorded well, and visibility issues can be more easily attributed to better preservation of the more robust horse remains than any problems with recording. The atypical patterning of horses in across inhumation cemeteries more likely underlines their unique role in Anglo-Saxon cosmology and mortuary ritual.

Inhumation	**No.**	**Cremation**	**No.**
Sheep	13	horse	241
Horse	10	sheep	202
Chicken	6	pig	90
Pig	4	cattle	83
~cattle	2	dog	22
~dog	2	deer (red / roe)	16
~goose	2	chicken	7
Duck	1	~bear	5
		~fox	5
		~wild bird	5
		goose	2
		~hare	1
		~beaver	1
		~fish	1

Table 6.3: Relative frequency of animal inclusions from cremations and inhumations in eastern England. ~ indicates joint rank.

At the other end of the table, the species representation is substantially more restricted in inhumation burials than in cremation burials. In particular, there are no wild taxa represented in inhumation burials aside from a single duck wing from Oakington. This can largely be considered a function of sample size. Wild taxa are rare even in cremation burials, where the number of burials containing animals is somewhere in the region of 40 times greater than inhumation burials, and they are generally present only in the larger cremation cemeteries. Unworked deer antler is probably the most widely-distributed offering of the wild animals included with cremations, and even this is only represented in 0.5 percent of cases.

By contrast, bird remains are relatively much better represented in inhumations than cremations. Chickens are the third most frequent taxon in inhumations, following sheep and horses, while they are about as frequent as most wild mammals in cremations. This can partially be attributed to taphonomic factors in cremations. Bird bone, being in general small, may have been commonly passed over in collection from pyre sites as carpals and tarsals from medium ungulates appear to have been (see Chapter 3). Additionally, cremated bird bone is often harder to identify to species or genus as birds are highly speciated and successful identification usually requires at least one end of a major element to be present. However, it should be noted that the majority of the chickens from the inhumation dataset derive from a single site, Castledyke South, with only one example of chicken recovered from Lakenheath, and none from other inhumation cemeteries in the dataset. Inhumation cemeteries appear to be affected much more significantly by local choices of animal inclusions, and the small size of the dataset means that it is unavoidably affected by choices relevant to a single cemetery.

Finally, if the major difference between animal inclusions in inhumation and cremation cemeteries can be argued to be one of scale, then this can be seen to be reflected in the quantity of animals within burials as well as their prevalence within cemeteries. Firstly, very few inhumation burials contain more than one taxon or animal within the grave. Only four examples are recorded in the dataset, and in one of these cases the “animal” in question has only been assumed from an organic stain within the grave (Snape, Grave 47). Grave 4 at Castledyke South contained limb bones of both pig and sheep, indicating multiple food joints were placed in the grave. However, despite being a convincingly “placed” deposit, carnivore gnawing was recorded on the sheep humerus, suggesting a rather more complicated taphonomic history than might be first assumed. All of the other deposits – at

Lakenheath, Sutton Hoo and Snape – combine a horse burial with either a sheep or a medium mammal meat deposit. If all four deposits are considered genuine, multiple animal burials make up only 7% of inhumation burials containing animal remains. Multiple animal burials are more common in cremations, comprising anywhere between 17% and 83% of burials containing animals depending on cemetery. In addition, cremation burials can contain more than two animals, with several large cremations at Sutton Hoo and Tranmer House containing a minimum of five different taxa each. Secondly, while multiple portions of domestic animals may be the more common pattern in cremation burials (see Section 5.3), it is clear from a number of cremations that complete animals – including whole sheep and cattle – could be included as part of a cremation burial. No similar complete sheep burials have been recovered from inhumation burials, and the only complete example of a domestic animal is the cow burial from Oakington, which is currently unique in England and may be a product of unique circumstances. Finally, two of the major differences in species representation between cremation and inhumation burials are the greater abundance of chickens and a relative lack of cattle elements in the inhumation burials. While both of these can partially be explained by taphonomic and sampling factors (see Chapter 3), this also appears to indicate that inhumation burials tend to include not only fewer animals at a lower frequency than cremations, but those which they include are predominantly smaller meat portions from smaller domestic animals. As with the prevalence discussed above, consumption of animals for the cremation pyre was greater than for inhumation burials, which may indicate that the inclusion of animals – and in some cases, a quantity of animals, suggesting an appreciable sacrifice of organic wealth – was more important in cremation rites than in inhumations.

6.1.4 Curated Bone

One further notable difference between inhumation and cremation rites is the different suites of curated bone amulets used. Table 6.4 shows the frequency of curated bone types in cremation and inhumation burials in Eastern

England. While none are frequent, and the numbers recovered from inhumation burials in this area are especially sparse, the lack of overlap is notable. Among cremations, the most common type of curated bone is astragalus manuports, followed by unworked deer antler (if this is counted as curated).

	Cremation	Inhumation
Perforated / mounted tooth	1	5
Perforated phalanx 3	2	
Perforated carpal / tarsal	6	
Astragalus manuport	21	
Astragalus group	7	
Unworked antler	13	

Table 6.4: Frequency of curated bone (# of burials) from cremation vs. inhumation burials in eastern England.

Other common deposits are astragalus groups and perforated carpals or tarsals, while the only classic “amulets” found are bird claws from Spong Hill and Elsham. None of these are paralleled in inhumation deposits in the eastern England dataset. Perforated carpals or tarsals reported from only two inhumation burials in the entire country, and similarly, only one burial from Sussex has been found with a bird claw pendant (see Section 5.7). By contrast, the only curated bone found within the eastern England dataset are perforated teeth – pig canines from Great Chesterford and Lakenheath, one canid tooth from Great Chesterford, and one tooth of uncertain derivation from Castledyke South. Perforated and mounted teeth are the most common type of curated bone found in inhumations (see Section 5.7), and their apparent absence from cremations is surprising. It is possible that this is an effect of taphonomy. Teeth from cremations are often shattered, and once shattered are more difficult to identify and, particularly, to identify as originally perforated. The only perforated tooth recovered from Spong Hill (Crem 1490) could not be identified to species, as only the root survived. However, considering that no beaver teeth were identified at Spong Hill, and the only pig teeth identified derived from cremations with other elements of pig therein, it seems more likely that this could be a genuine pattern. Similarly, the lack of astragalus manuports or groups of astragali in inhumations could be explained if these are considered cognate with bone gaming pieces and dice, which are included particularly in high-status male inhumation burials. While it would be easy to interpret the curated bone evidence as indicating different communities of belief informing the different rites, the problems of visibility and of different functionalities indicate a more complex picture.

6.1.5 Conclusions

In summary, cremation cemeteries consistently contain more animal remains than inhumation cemeteries, both in terms of overall prevalence and in terms of the contents of individual graves. While inhumation cemeteries appear to be subject to local patterning, making it difficult to draw overall conclusions, the offerings tend to be focused around smaller meat portions and domestic animals more generally, while the larger sample size in cremation cemeteries includes a great deal more diversity in terms of animal offerings.

Despite these differences, cremation practice and inhumation practice appear broadly to be drawing on the same symbolic repertoire within mortuary practice. In both rites, animals are used in the formation of a grave tableau, in creating a final, memorable image of the dead. Horses hold a role of special significance in both rites, although the way that significance is employed differs between the rites. The roles of dogs as occasional companions and domestic animals as food offerings are consistent, and it is even arguable that the inclusion of curated bone is more similar than it appears at first sight.

If this is the case, is it possible to argue that, in terms at least of organic wealth, inhumation is simply the “poor cousin” of cremation? It certainly appears from their prevalence that animal remains are less significant to include in inhumation burials than in cremations. However, if the issue was simply that of wealth, it could be expected that inhumation burials which include animal remains are notably wealthier in other respects, and this does not appear to be the case. An alternative option is suggested by the observation at Castledyke South that several of the burials with chicken remains appear to be concentrated in a particular area of the cemetery, suggesting a very particular practice related to a small section of the community (Lee 2007: 68). It is possible that highly localised "family" practices and combinations also exist in cremation cemeteries and contribute to the diversity and apparent lack of identity patterning (see Section 6.2), but are obscured simply by the larger scale of the data and the multitude of local practices it could potentially represent. The differences between cremation and inhumation rites are primarily of scale, but within this also appear to involve complex differences of choice, local practice, and ultimately belief.

6.2 Humans and Animals: Biological Identity

The question of variation according to human age and sex is among the most obvious to ask of a grave goods dataset. These inclusions offer a unique opportunity within the field of zooarchaeology in accessing the social roles of animals or food, as grave assemblages are the only ones which can directly be associated with human individuals. Animal inclusions, however, are largely neglected in age and sex studies, certainly compared to other types of grave furniture, with any observations made on a site-specific basis and usually by the zooarchaeologist assessing the assemblage (e.g. Bond 1994) and rarely integrated with other cemetery evidence, although Richards (1987) and Ravn (1999, 2003) are notable exceptions in this respect. In general, these site-specific studies have tended to find only slight patterning, particularly in cremation cemeteries, although this could be due to the complexity of the animal bone data and the difficulties of attributing human identity in cremation burials.

The difficulties of summarising disparate evidence of variable quality have been discussed earlier, including the problems of integrating age and sex data from different osteoarchaeologists into comparable categories (see Chapter 4). Particularly problematic is the fact that the majority of animal bone derives from cremation cemeteries, where the age and sex of humans are substantially more problematic to ascertain than in most inhumation burials. In particular, sex cannot be assigned with any certainty in the majority of cremation burials. The dataset which can be used to discuss human identity is therefore surprisingly limited. Table 6.5 shows the cremation cemeteries and numbers of burials within these cemeteries used in the dataset from which age and sex data from the humans is available. As ever, Spong Hill dominates the dataset, and evidence from other sites is substantially limited, particularly in terms of sex. Overall prevalence of animal remains in aged and sexed cremations is available from the Elsham Wolds and Cleatham cemeteries, although little further information is currently available, as few of the animal inclusions have been identified to taxon. In terms of inhumations, while reliable age and sex information are largely available from all cemeteries surveyed, the number of burials containing animal bone is limited, again limiting the conclusions which can therefore be drawn (Table 6.6).

Site	County	Infant	Juvenile	Adolescent			Adult			Older adult			Adult unk			Male	Female
	Age	*0-4yrs*	*5-12yrs*	*13-18yrs*			*19-30/40yrs*			*30/40yrs +*			*uncertain*			*all*	*all*
	Sex	*all*	*all*	*m*	*f*	*u*	*m*	*f*	*u*	*m*	*f*	*u*	*m*	*f*	*u*	*all*	*all*
Spong Hill	Norfolk	46	45	5	3	32	47	100	139	29	30	52	8	8	66	91	145
Illington	Norfolk		2			3			2						14		
Morningthorpe	Norfolk					1											
Sutton Hoo	Suffolk								1				2	1	2	2	1
Tranmer House	Suffolk						1	3						2	1	1	6
Lakenheath	Suffolk								2								
Snape	Suffolk				1			1	1		1			1	3		4
Great Chesterford	Cambridgeshire		1												4		
Minerva	Cambridgeshire														2		
Rayleigh	Essex	1													4		
Mucking	Essex								1			1			2		
Baston	Lincolnshire														1		
Castledyke South	Lincolnshire														1		

Table 6.5: Age and sex of human cremations with animals included from eastern England sites.

Site	County	Infant	Juvenile	Adolescent			Adult			Older adult			Male	Female
	Age	*0-4yrs*	*5-12yrs*	*13-18yrs*			*19-30/40yrs*			*30/40yrs +*				
	Sex			*m*	*f*	*u*	*m*	*f*	*u*	*m*	*f*	*u*		
Lakenheath	Suffolk			1	1		9				1		10	2
Snape	Suffolk			1									1	
Sutton Hoo	Suffolk						1						1	
Buttermarket	Suffolk		1				1						1	
Gunthorpe	Cambridgeshire						1						1	
Oakington	Cambridgeshire						1	1					1	1
Great Chesterford	Cambridgeshire		1				1						2	
Castledyke South	Lincolnshire		3					3	2		2	1	1	5

Table 6.6: Age and sex of human inhumations with animals included from eastern England sites.

6.2.1 Age & Sex

The furnishings and construction of the grave in the early Anglo-Saxon period are strongly linked to both age and gender, enabling the recreation of male and female life-courses and their major points of transition (Stoodley 2011; Lucy 2011). A recent review of the life cycle and ageing from inhumation burial has indicated that three age-related transitions can be discerned, with burials at each age-stage marked by different quantity and types of grave goods (Stoodley 2011). These transitions occur between very young infants (no grave goods) and younger children (few grave goods); at puberty (marked increase of especially feminine grave goods); and at the end of adolescence and the beginning of full adulthood, at around 18 years old (grave goods strongly signifying gender identity) (Stoodley 2011: 659-663; see Table 6.7). Changes in older age are more difficult to identify, but some changes related to seniority have been noted, which can include a reduced degree of gender symbolism (Gowland 2006; Stoodley 2011). The times of transition are broadly the same for male and female burials, and specifically gendered assemblages are present from a relatively young age (Stoodley 2011).

Age category	Age (years)
Infant	0-4
Juvenile	5-12
Adolescent	13-18
Adult	19-35
Older adult	35+

Table 6.7: Age divisions for human burials used in this section, based on Stoodley (2011) and McKinley (1994).

The broad picture appears to be one of accumulating status and increasingly elaborate burial assemblages until fully-gendered adulthood is reached in late teens, with the age of majority generally considered to be around 11-12 years old (Crawford 1999). One question, therefore, is to what extent these transitions to different statuses are reflected in the animals included in burials, both in terms of quantity and in terms of what animals or portions are afforded, and to what extent this differs between different types of cemeteries. A more precise age categorisation has been used here than that described in Chapter 4, which has been employed thus far in the thesis. This follows Stoodley's proposed transitions, and corresponds closely to the age categories used by McKinley (1994) for Spong Hill (Table 6.6). Any individuals for which the age is uncertain (e.g. those which could only be identified to adolescent/adult, or infant/juvenile) are excluded. Adults which could not be categorised as either older or younger ("uncertain adults") are for the most part also excluded to improve the boundaries of the "older adult" category, although for some smaller cemeteries this proved impossible to sustain, and their inclusion in these cases is noted. As ever, not all cemeteries nor analysts used the same methods of categorisation, and on occasion age ranges given fell between two of the designated categories (e.g. 10-14 years). In these circumstances, the burial was included in the category into which the majority of the age range fell.

6.2.2 Cremations

6.2.2.1 Spong Hill, Elsham Wolds & Cleatham

Only three cremation cemeteries in the dataset are sufficiently large and contain a sufficient number of animal inclusions to comment on their prevalence across the different age categories: namely, Spong Hill, Elsham Wolds and Cleatham. The relation of animal inclusions to age and sex has been investigated previously at all three cemeteries, and in the case of Spong Hill, in a number of studies (Squires 2011; McKinley 1994; Bond 1994; Ravn 1999; Bond & Worley 2006), the most recent of which takes account of the new phasing of the Spong Hill cemetery (Hills & Lucy 2013). These have been reanalysed in line with the methodology for interpreting animal remains from cremation set out in Chapter 4, and in order to consider the potential impact of seniority, although the data from Elsham Wolds and Cleatham has been used minimally due to the incomplete analysis of the animal bone from these sites (Chapter 4).

Table 6.8 shows the prevalence of animal inclusions as a percentage of total cremations for these three cemeteries, and the results are also discussed extensively in Hills & Lucy (2013: 259-264; Spong Hill) and Squires (2011; Elsham Wolds & Cleatham). In all three cemeteries, infant and juvenile burials contain animal remains less often than adult and adolescent cremations, with animal inclusions most common with adolescents. This is a pattern which is essentially robust across all phases at Spong Hill, with some variations (Hills & Lucy 2013). The proportion of cremations with more than one animal inclusion (multiple) at Spong Hill also follows the same pattern, with the number of infant and juvenile cremations with multiple animals extremely low, comprising 1% and 5% of total cremations respectively. While not as marked, at all three cemeteries it also appears that senior adults have fewer animal inclusions than adolescents and younger adults, and again have fewer multiple animal inclusions at Spong Hill.

Site	Test	Infant	Juvenile	Adolescent	Adult	Older adult
Spong Hill	Total cremations	199	147	97	753	361
Spong Hill	# with animals	46	45	39	292	108
Spong Hill	% with animals	23.1	30.6	40.2	38.8	29.9
Spong Hill	# with multiple animals	2	7	13	79	23
Spong Hill	% with multiple animals	1.0	4.8	13.4	10.5	6.4
Elsham Wolds	Total cremations	31	33	32	170	26
Elsham Wolds	# with animals	5	8	22	102	10
Elsham Wolds	% with animals	16.1	24.2	68.8	60	38.5
Cleatham	Total cremations	77	53	46	320	22
Cleatham	# with animals	8	15	26	190	10
Cleatham	% with animals	10.4	28.3	56.5	59.4	45.5

Table 6.8: Prevalence of animal bone in cremations against age at Spong Hill, Elsham Wolds and Cleatham.

Beyond prevalence, it has been argued by Hills & Lucy (2013) that age and sex strongly structure the taxa included in cremations at Spong Hill. Table 6.9 shows a summary of taxa with different age categories at Spong Hill. The most notable pattern is the lack of horses with juvenile burials, a pattern which has been noted by multiple previous analysts (McKinley 1994; Bond &

Worley 2006; Hills & Lucy 2013). While burial with a horse may have been largely restricted to individuals past the age of puberty, the restriction was not complete, as several burials of both younger and older juveniles do contain horses. Interestingly, none of these burials can be attributed to the earliest phases at Spong Hill, suggesting this may have been more strongly restricted in Phase A, and only expanded to certain juveniles from Phase B onwards.

	Infant		**Juvenile**		**Adolescent**		**Adult**		**Older adult**	
Total		*46*		*45*		*39*		*292*		*108*
	n	*%*	**n**	*%*	**n**	*%*	**n**	*%*	**n**	*%*
Horse			7	*15*	15	*38*	75	*26*	23	*21*
Sheep	13	*28*	11	*24*	9	*23*	70	*24*	26	*24*
Cattle	1	*2*	4	*9*	2	*5*	26	*9*	7	*6*
Pig	5	*11*	6	*13*	5	*13*	37	*13*	14	*13*
Dog	1	*2*	2	*4*	2	*5*	7	*2*	2	*2*
Deer antler			2	*4*			3	*1*	2	*2*
Chicken			1	*2*					2	*2*
Goose							1	*0*		
Wild bird	1	*2*			1	*2*				
Hare									1	*1*
Bear							1	*0*		
Fox					1	*2*	2	*1*		
Amulet	1	*2*	1	*2*	1	*2*	19	*7*	4	*4*
fish							1	*0*		
bird							7	*2*	2	*2*
medium mammal	23	*50*	15	*33*	14	*36*	104	*36*	30	*28*
large mammal	6	*13*	6	*13*	9	*23*	49	*17*	27	*25*

Table 6.9: Animal inclusions with age categories at Spong Hill.

Horses appear also to be slightly less common with older adults than younger adults and adolescents. This corresponds to patterns previously noted by Bond & Worley (2006), although this data was not corrected against total number of cremations for each age group and suggests a more substantial drop-off than shown in Table 6.9. Table 6.10 shows a different construction of the data for cremations containing horse, with adults separated into younger adult, mature adult (including older mature and younger mature), and older adult. Here, it is clear than horses are predominantly included with adolescents and younger adults, with a significant percentage drop-off with mature and older adults. It is worth noting the variability in total numbers of cremations between the age categories (ranging from 67 “young adults” to 569 “mature adults”). However, it does not appear that the small sample sizes for some categories are biasing the dataset in any consistent way, with small numbers of young adults returning a high percentage and small numbers of older adults returning a low percentage of horses.

	infant	**juvenile**	**adolescent**	**young adult**	**mature adult**	**older adult**
Total cremations	199	147	97	67	569	91
Total with animals	46	45	39	37	205	24
Total with horses		7	15	16	37	4
% of total animals with horses		15.6	38.5	43.2	18.0	16.7
% of total cremations with horses		4.8	15.5	23.9	6.5	4.4

Table 6.10: Number of horses with different age categories at Spong Hill.

While adult cremations at Spong Hill contain both the largest number and widest range of animal inclusions, it is also important to note that there are very few categories of taxa aside from horses which are restricted entirely from inclusion with infant or juvenile burials. While large mammals are infrequent, particularly in infant burials, it is also clear that they are present in some cases. Birds are also included in rare instances, with one chicken included with a juvenile burial and two non-domestic birds included with an infant cremation (C2008; 2081). Wild mammals are also largely absent from juvenile burials, with only two examples of deer antler included. The majority of wild taxa (bear, hare, beaver, fox etc.) are found only with individuals above the age of puberty, although the prevalence of wild animals is broadly similar across all age categories, at about 1% of all cremations containing animal remains.

In terms of domestic mammals, it has been noted many times that sheep and medium-sized ungulates are the most common inclusion with infant burials, and also with juvenile burials, although here the diversity of inclusions is greater and the dominance less marked (McKinley 1994; Hills & Lucy 2013). To this, it can be further added that the portions of sheep included in infant and juvenile burials tend to be single portions, and very predominantly rib portions, while adults and older adults tend to have a greater incidence of multiple portions deriving from across the carcass (Section 5.3). Pig is the only other taxon which, like sheep, does not change markedly in frequency across age categories, indicating its relatively high prevalence in infant and juvenile cremations. Unlike sheep, however, there is no apparent preference towards any particular portion of the animal with any age category, nor is there a similar dominance of single portions with younger individuals (Section 5.3). Instead, the proportion of burials with pig and the distribution of different skeletal areas is remarkably similar across all age categories (Section 5.3).

Sex differences in animal inclusions are similarly subtle and contentious at Spong Hill. Few burials can be attributed to sex with a good degree of confidence, significantly restricting the sample size available for considering sex differences. In general, pigs are overall more common in female cremations than with males (McKinley 1994), and horses tend to be slightly more common with male cremations (Hills & Lucy 2013). When the combinations of animals in multiple cremations are taken into account, sheep as a single inclusion tend to be far more common with females, while horses in combination with other animals is more common with males (Hills & Lucy 2013). The association of females with higher proportions of domestic mammal is apparent also in the portions included, with female cremations containing more multiple portions of sheep and pigs proportionally compared to males (Section 5.3). Correspondence analysis conducted by Ravn (1999) has also indicated a significant association between some adult male burials, horses and male-associated artefacts such as playing pieces. The evidence appears to suggest that for certain parts of the population contributing to Spong Hill, inclusion of a horse with adult male cremation was important, perhaps prefiguring the later inhumation burials. Female wealth, at least in some instances, was more likely to be demonstrated through inclusion of “meat” animals. However, it should be emphasised that these are only two trends, and relatively slight, within a cemetery which incorporates a diverse range of practices.

As with ageing, there appear to be few distinct restrictions of taxa to one sex or the other. Including uncertain identifications (??m/??f), the range of wild mammals included with females is substantially larger than with males, with all instances of bear, beaver, fox and fish in sexed cremations occurring in female cremations (Table 6.11). However, again, the number of cremations sexed as female is larger than that of males, introducing an unequal sampling effect, and with this taken into account the differences between the two are not significant (chi-square test, $p = 0.25$, $p>0.05$). The most distinct examples of sex associations in animal grave goods are instead found in the curated bone, with perforated bird claws restricted to females and groups of astragali apparently restricted to males, and several other categories (antler, single astragalus manuports, and perforated carpals) included with both male and female cremations (Section 5.7). In this, Spong Hill follows widespread sex patterns associated with curated bone, which appear currently to hold true country-wide.

In summary, several overarching patterns can be seen at Spong Hill. Animal inclusions in cremations are both most frequent and most numerous in adolescent and younger adult cremations, and less frequent and numerous with infants, children and, to an extent, older adults. Where infants and juveniles are provided with animals, this is most often a single domestic mammal, most often a single meat portion of this animal, and within this, most often a single portion of sheep ribs. The inclusion of horses is broadly restricted to adolescents and young adults, although they are also included with older adults and on occasion with juveniles. Wild mammals are rare, and found typically with adult cremations. Aside from curated bone, sex associations are slight, but there is a tentative association between males and multiple cremations including horses, and females and multiple portions of domestic animals.

	Male	Female
Horse	13	10
Sheep	8	15
Cattle	9	6
Pig	3	15
Dog	2	1
Deer antler		2
Deer other		
Chicken	1	1
Goose		
Wild bird		
Hare		
Bear		
Fox		2
Beaver		
Curated bone	3	5
fish		
bird	2	1
medium mammal	19	24
large mammal	10	17
TOTAL	44	77

Table 6.11: Animal inclusions with male and female cremations at Spong Hill, excluding uncertain sexing (m??/f??)

While age and sex are clearly influential in structuring the inclusion of animals, what is perhaps most striking about the results from Spong Hill is that, *contra* Hills & Lucy (2013), their influence appears to have been relatively slight, especially when taking into account that patterns are discernible related to age and sex within the other grave good assemblages (Lucy 2011: 694; Ravn 1999). Few taxa or portions or quantities of animals are restricted to particular age and sex categories – instead, most animals and most portions of domestic mammals can be included with cremations from the youngest to the oldest. In general, the average quantity of taxa and therefore the range included can be seen to increase with each age stage up to adolescence, which appears to represent the major transition into an "adult" range of animals. The relatively slight difference in animals provided between adult males and females is particularly atypical, especially when compared to the much stronger structuring shown in the inhumations (below). The potential factors associated with an animal inclusion – whether it is single or part of a multiple animal cremation; what taxon it is; what portion is included; what meat value this portion represents; how many portions are included – have each been discussed separately throughout, but in reality are likely to be interrelated. Further analysis which is able to deal with this interrelation may be able to elucidate further age or sex based structuring, although it is expected that Spong Hill will continue to show substantial choice in how the cremation is constructed.

6.2.2.2 Beyond Spong Hill

As ever, beyond Spong Hill the data available is far slighter, making it difficult to verify these patterns across the wider region (Table 6.4, above). In very few cases were adult cremations from other cemeteries in eastern England able to be attributed to either older or younger adult, with the vast majority of cremations containing animal inclusions included within “unspecified” adult cremations. Overall, only two cremations containing animal bone were attributed to older adult – one from Mucking, and one from Snape – and only five cremations, from Mucking, Snape and Illington, could be attributed confidently to younger adult.

The problem is similar for infant and juvenile burials. In total, only four non-adult cremations outside of Spong Hill contained animal bone – one infant and three juveniles (Table 6.5, above). While prevalence is problematic with small sample sizes, it appears clear that the lack of animal remains in infant, juvenile and older adult cremations broadly reflects an overall lack of child or aged adult cremations from the sites in question. Three of the sites with the highest prevalence of animal remains – Lakenheath, Sutton Hoo and Tranmer House – do not contain any infant or juvenile cremations, and the lack of child cremations perhaps also contributes to the higher prevalence of animal remains at these sites. In general, prevalence of animal inclusions among child cremations, as at Spong Hill, appears to be lower than within adolescent and adult cremations.

Table 6.12 shows the taxa included within the different age categories in cremations. As ever, the greatest range of taxa appears with adults, although this is a result of the extremely small sample sizes for the other age categories. The only infant cremation, from Rayleigh, contained bone which was identified only to “small mammal”; and one of the three juvenile cremations, from Great Chesterford, contained “large mammal” bone (Table 6.12). The other two juvenile cremations derived from Illington. Cremation 33, of an older child, contained a single cremated cow carpal, an ambiguous deposit which could be interpreted as a manuport (although without clear evidence of wear), the remnant of a larger foreleg joint, or a single element included inadvertently on the pyre site or in the cremation. Cremation 5, also of an older child, by contrast contained sheep elements amounting either to several portions (lower foreleg, hindleg and cranium) or to the whole animal. While not especially unique, this again supports the conclusion from Spong Hill that even below the age of puberty individuals can be entitled to relatively substantial inclusions of domestic animals.

Few cremations containing animal bone, outside of Spong Hill, were sexed with any degree of confidence (Table 6.13), and the majority of these were female. At Snape, four cremations containing animal bone were sexed as female or possible female, of which three contained unidentified animal bone and only one contained bone which could be identified to taxon (horse). Similarly, at Tranmer House, six cremations containing animal bone were sexed as possible females, four of which contained a combination of horses and domestic animals, and two of which contained only medium mammal. The one sexed male burial from Tranmer House contained only large mammal. At Sutton Hoo, only two cremations could be confidently sexed – one, containing a male, also contained a horse, and a male and female double burial contained both horse and dog. The dominance of females with animal remains at Tranmer House appears primarily to be an artefact of cemetery demography, as more females have been identified at Tranmer than males, and animal remains were included in every sexed cremation. The dominance of females at Snape is less explicable, as here animal remains were present with all four cremations sexed as female and absent from all four cremations identified as male – however, considering the poor preservation and low sample numbers from this site, it is perhaps unadvisable to read too much into this. It is clear, however, that female burials regularly contained both horses and other domestic mammals, sometimes in large quantities. The fact that this is true in the case of high-status mid to late 6th century burials at Tranmer House is potentially interesting, considering the shift towards high-status horse burial (either cremation or inhumation) which is associated with males from the late 6th century onwards (see below, Section 6.4).

Site	Taxon	Infant	Juvenile	Adolescent	Adult	Older adult
Sutton Hoo	Horse				3	
	sheep				2	
	cattle				1	
	Pig				2	
	dog				1	
	deer antler				1	
	medium mammal				1	
	large mammal				2	
Tranmer House	horse				3	
	cattle				3	
	sheep				2	
	Pig				1	
	bird				1	
	large mammal				2	
	medium mammal				4	
	small mammal				2	
Lakenheath	horse				1	
	sheep				1	
	medium mammal				1	
Great Chesterford	sheep				2	
	bird				2	
	large mammal		1			
Morningthorpe	cattle			1		
Minerva	sheep				1	
	Pig				1	
Rayleigh	sheep				2	
	cattle				1	
	small mammal	1				
Baston	large mammal				1	
Mucking	cattle				2	
	sheep				1	
	medium mammal				1	
Snape	horse				1	
Illington	horse				6	
	sheep		1	1	4	
	cattle		1		3	
	Pig			1	1	
	deer antler				2	
	wild bird				1	
	medium mammal				2	
	dog			1		

Table 6.12: Taxa included with age categories in cremation burials from eastern England, excluding Spong Hill, Elsham Wolds & Cleatham.

Site	Taxon	Male	Female
Sutton Hoo	horse	2	1
	sheep		
	cattle		
	pig		
	dog	1	1
	deer antler		
	medium mammal		
	large mammal		
Tranmer House	horse		4
	cattle		4
	sheep		3
	pig		1
	bird		1
	large mammal	1	
	medium mammal		3
	small mammal		2
Snape	horse	1	

Table 6.13: Animals with male and female cremation burials from eastern England, excluding Spong Hill, Elsham Wolds and Cleatham, including uncertain sex adults (m??/f??).

6.2.3 Inhumations

Table 6.14 shows the distribution of animals across age categories for the major inhumation cemeteries in the Eastern England dataset. As has been mentioned previously (Section 6.1), the only two cemeteries with more than two burials containing animal inclusions are Lakenheath and Castledyke South, which show distinctly different profiles. Prevalence information is unfortunately unavailable for Lakenheath, as the cemetery is currently unpublished and full demographic information was not available at the time of writing. Lakenheath and Castledyke South are distinctly different in terms of the demography of animal inclusions, with animals very predominantly included with young adult males at Lakenheath, compared to a much wider range of inclusions with juveniles, adult and older adult females at Castledyke South (see also below, Section 6.3, for detailed discussion). With only two cemeteries of different dates and geographic locations yielding sufficient animal inclusions that a distinct profile can be seen, it is difficult to tell what type of variability this represents, or whether either can be seen as representative of a broader trend (see also below, Section 6.3).

However, if the inclusions from the other cemeteries are considered together, the majority of animal inclusions (six out of nine) occur with adult or adolescent males, none of which are specifically defined as older adults. These include a range of deposits, comprising horse burials with and without domestic animal portion (Snape, Sutton Hoo, Great Chesterford), probable meat portions (Gunthorpe, Buttermarket), and one instance of a decorative duck wing (Oakington, Section 5.5). Of the three deposits not included with adult males, one is a dog included with a male juvenile burial (Great Chesterford), one an organic stain which may represent an animal deposit with an unsexed juvenile (Buttermarket), and one deposit of a complete cow with an adult female (Oakington). The two inclusions from burials other than adult males at Lakenheath are one elderly female with a portion of sheep, and one adolescent female with a pig tooth amulet. For almost all of these burials compelling reasons can be advanced for their not fitting a prevailing

Site	Taxon	Infant	Juvenile	Adolescent	Adult	Older adult
Castledyke South	pig				1	
	sheep		1		2	
	goose					1
	chicken		1		1	3
	amulet				1	
Lakenheath	horse				2	
	cattle				1	
	sheep			1	6	1
	chicken				1	
	amulet			1		
Gunthorpe	medium				1	
Oakington	duck				1	
	cattle				1	
Buttermarket	stain		1			
	pig				1	
Great Chesterford	dog		1			
	horse				1	
Snape	horse			1		
	small			1		
Sutton Hoo	horse				1	
	sheep				1	

Table 6.14: Taxa included with age categories in inhumation burials in eastern England.

"adult male" pattern. Perforated or worn tooth and claw amulets are exclusively associated with females and children in a practice which appears to be country-wide and applicable to both cremations and inhumations, perhaps as part of a general association of females with jewellery (Section 5.7), and the inclusion of the Lakenheath amulet with a young female fits this pattern. Similarly, dogs have been noted to occur across a wide range of ages, including the young and the elderly, and are probably included in burials in specific personal circumstances (Section 5.4). The inclusion of a meat portion with an elderly female burial at Lakenheath can be seen as a deliberate transformation of the young male – meat pattern, although the reasons behind this are unclear. It has been argued that there is a reduced level of feminine symbolism within grave good assemblages included with older females (Stoodley 2011: 663), perhaps indicating that it is easier for an older female than a younger female to be given a typically-male grave inclusion. By contrast, the cow burial at Oakington is anomalous in many respects, and its inclusion with a female burial is only one of them.

In summary, it can be suggested that for the majority of inhumation cemeteries animal inclusions are most common with adolescent and young adult males. This is a pattern which has previously been noted for horse burials, but the dataset from eastern England appears to suggest that it is also applicable to other taxa, predominantly portions of domestic animals. With this in mind, the later 6th and 7th century burials at Castledyke South appear anomalous within the dataset, with portions of sheep and also chickens included with adult females, and occasionally with juveniles. In other respects, however, Castledyke South follows standard patterns of sex representation, with the single wearable amulet recovered from the site found with an adult female. Further discussion of regional variation in age and sex patterning can be found below (Section 6.3).

6.2.4 Identity and choice

While age and sex clearly influence the inclusion of animals, often within the parameters of regional and local traditions which change across the period, the variation in animal assemblages contained within these categories remains substantial. At Lakenheath, burials G117, G443 and G294 are all burials of young adult males. While all are similar in that they contain animal remains, G117 contains one portion of cattle ribs, G443 contains three portions of sheep, and G294 contains a complete chicken. Similarly, at Spong Hill, two adult female cremations of the same date (C3252, C3320) contain radically different animal assemblages: C3252 containing the hindleg of an elderly sheep; C3320 containing a horse and the front leg and ribs of a younger sheep; while C3280 - also an adult female of the same date – is entirely unaccompanied by animals. These are only a few examples from within the dataset, and many more can be advanced. In each of these examples, there is no clear reason for the inclusion of cattle instead of sheep or sheep instead of chicken, nor, in the Spong Hill example, why one woman should have a larger assemblage of animals than the other. The range of factors which might influence a burial beyond the purely biological are substantial, including personal or family wealth, position in the community, marital status, family and ancestry, belief, and many more individual aspects of personality and life history which are inaccessible at this distance. Variation is a key characteristic of Anglo-Saxon grave assemblages, even within the same cemeteries, and has been argued to indicate a substantial level of personal or situational choice within the parameters of what is broadly appropriate for men or women of particular ages (Dickinson 2011). To what extent all of this variation in animals was considered significant is more difficult to answer – while the inclusion or non-inclusion of a horse is likely to have been a meaningful decision impacting on the overall experience (and expense) of the funeral, the choice between sheep or pig, or even different portions of the same animal, may not have carried the same symbolic weighting. Importantly, it should also be remembered that animals were included in less than half of all burials even at large cremation cemeteries such as Spong Hill, where prevalence is overall at its highest (Section 5.1; 6.1). While it is clear that age and presumably therefore property status is a factor in the inclusion or non-inclusion of animals, there are also many burials which do not contain animals where materially, there appears little reason for their exclusion. There is clearly a wide scope within burial practice for selection and choice of animals.

6.3 Animal, People and Place: Geographical Diversity

Discussion of variation of both inhumation and cremation practice across England has been limited, since there has been little in the way of regional summaries of animals in Anglo-Saxon mortuary practice, with most studies focusing on one or two key cemeteries (Bond 1996; Bond & Worley 2006; Williams 2001; see also Chapter 2). It has generally been assumed that the use of animals in cremation rites is consistent across the Core Cremation Zone (Norfolk, Lincolnshire and East Yorkshire; Hills & Lucy 2013), with the results from cemeteries as far apart as Spong Hill, Norfolk and Sancton, Yorkshire, showing highly similar patterns of animal use (Bond 1996). Recent reassessment of cremations from the Midlands has sought to investigate how and whether animal use in cremations differs in this area compared to the Core Cremation Zone (McCullough-French 2017). As there have been no systematic assessments of animal bone from inhumations, no consideration has been given to date as to whether and how these practices may vary between or within regions.

Variation in practice may occur on several different scales, from local, indicating differences between different cemeteries, to supra-regional, indicating patterns which are common across England and only vary in comparison to the continent. The dataset around which this thesis is based is focused regionally on eastern England, incorporating the majority of the Core Cremation Zone as well as several counties lying on the periphery of this proposed zone (Essex, Cambridgeshire and Suffolk). Several other secondary sources are used for comparison, including individual cemeteries in other areas of the country, selected on the basis of good recording and accessible publication, and surveys of particular areas or types of inclusion (Meaney 1981; Fern 2005; McCullough-French 2017). As such, it is not expected that all possible variation will be extensively explored, but this is used instead to set patterns observed from the main dataset into a broader context.

6.3.1 Inhumations

The inhumation cemeteries in the eastern England dataset which have yielded animal bones are few and far-between, which can be attributed to a combination of low prevalence and poor preservation across much of Norfolk and southern Lincolnshire (see Chapter 3; Figure 6.1). With such a sparse dataset, it is difficult to suggest much about broader regional patterning and differences in animal use between regions. However, several suggestive points can be noted from the dataset which indicate patterns requiring further exploration.

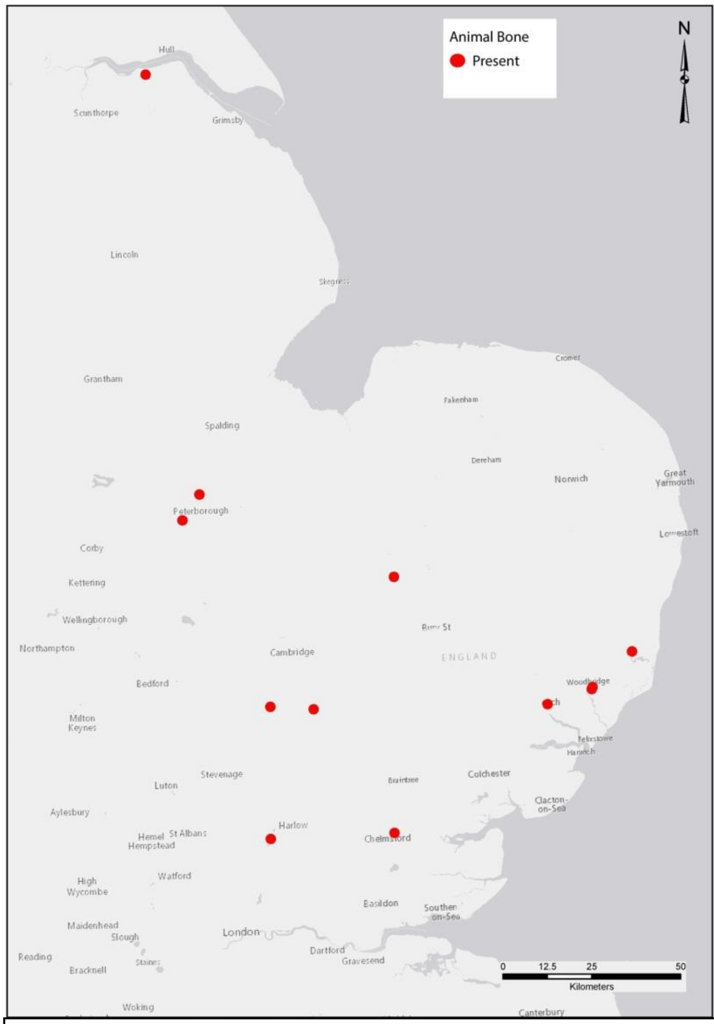


Figure 6.1: Inhumation cemeteries in eastern England which have yielded animal bone from burials.

Firstly, only two cemeteries in the dataset yielded more than one or two examples of animal bone from graves: Castledyke South, in North Lincolnshire; and Lakenheath, in Suffolk. While both sites fall within the boundaries of the Core Cremation Zone, they display significantly different traits in their faunal assemblages. At Lakenheath, sheep are by far the most common deposit, with horse, pig, chicken and cattle remains also included in graves. At Castledyke South, chicken is the most commonly identified taxon, although the combined sheep and small ungulate numbers may again mean that sheep is the most commonly included taxon. Goose and pig have also been identified from Castledyke. Furthermore, the two sites show significant differences in biological identity patterning. At Castledyke, all graves from which animal remains have been identified are those of either adult females or juveniles, with the exception of one man buried with a goose. At Lakenheath, by contrast, all deposits are with adult males, with two exceptions: one deposit of sheep ribs and humerus with an adult female, and one pig tooth amulet with a 10-14 year old female. The amulet here is following an established pattern for the inclusion of wearable amulets with juveniles and women (see Section 5.7, also above). Excluding this, the two “exceptions” to the patterns can be seen as specific transformations of the established pattern at these sites – at Castledyke South, the inclusion of a goose rather than a chicken with a man rather than a woman; at Lakenheath, the inclusion of “male” meat deposit with an older woman. While the inclusion of animals is still very much a minority rite at these cemeteries, the specificity of the patterning suggests it was not unimportant.

The examples of Castledyke South and Lakenheath suggest a substantial variability between inhumation cemeteries, although whether this variation is local, regional, or simply the product of one of the cemeteries being atypical is harder to define. At the other cemeteries in Suffolk where animal remains have been found – Sutton Hoo, Snape and Buttermarket – deposits are also exclusively with adult males, although in two out of the three cases this can be attributed to the animals being horses and therefore following a broader, country-wide pattern (see Section 5.2). In the Cambridgeshire and Essex cemeteries, it is hard to discern patterns due to the scant nature of the evidence and the variation in animal inclusions. Great Chesterford, Oakington and Springfield Lyons contain unaccompanied horse burials, which are not found elsewhere in the dataset. Animal deposits are included with adults of both sexes, and one dog was included with a juvenile at Great Chesterford. The single deposits at Melbourn and Gunthorpe are both medium mammal meat deposits; while the only verifiable deposits at Oakington consist of a complete cow and a decorative drake wing. While more evidence is undoubtedly required, both the variability and the paucity of the dataset tend to suggest that decisions regarding animal inclusions were

		Perforated teeth				Perforated phalanx 3		Perforated vertebrae	Perforated carpal / tarsal
		Pig	Beaver	Canid	Other	Bird	Carnivore	Fish	
South-east	Kent	x		x					x
	Sussex					x	x		
	Bedfordshire		x					x	
South-west	Berkshire			x					x
	Oxfordshire	x	x	x					
	Wiltshire	x					x		
	Gloucestershire		x						
	Worcestershire			x					
	Warwickshire		x						
	Somerset	x							
East	Essex				x				
	Cambridgeshire		x						
	Suffolk	x							
	Lincolnshire		x		x				
North	Yorkshire	x							
	Derbyshire		x	x					

Table 6.15: Distribution by county of curated bone in inhumations from eastern England dataset and Meaney (1981).

local to each cemetery, and only relevant to a small subset of individuals and situations within those cemeteries.

While the general trend in inhumation cemeteries may be towards local decisions and patterning, it is worth noting that some traditions are more widespread. The inclusion of horses with male inhumations appears to be a practice which occurs throughout much of the Anglo-Saxon area of England and may have been influenced by Continental practices (Fern 2007; see also Section 5.2). Similarly, Meaney's (1981) survey of amulets in inhumations shows a surprising degree of consistency throughout the country. Table 6.15 shows the distribution of different types of curated bone and the modern counties from which they have been found. All of the common types of curated bone – perforated pig, beaver and canine teeth – show a wide spread, both from east to west and north to south, and appear to occur contemporaneously in all areas. The less common ones – perforated claws and perforated carpals / tarsals – occur primarily in the south, but evidence from cremations in this dataset also expands this distribution into eastern England. In addition, perforated bones are consistently found with female and juvenile burials throughout the country (see Section 5.7). While some decisions in inhumation cemeteries may have occurred at the local level, other traditions appear to have been informed by beliefs which were held in common across a surprisingly wide area.

In the absence of a systematic survey of animal deposits in inhumation cemeteries across England, it is hard to suggest how typical or atypical eastern England may be. A recent survey of the evidence from Kent indicates a number of commonalities with eastern England, including low prevalence of remains and dominance of domestic animals (Sladen 2016), although methodological differences unfortunately mean that the survey results are not directly comparable with the results from this thesis. However, evidence from elsewhere in the country indicates that many different practices may have persisted. Table 6.16 shows the animal remains from the mid-5th to 7th century cemetery at Butler's Field, Gloucestershire (Boyle et al. 1998). Of those animal remains clearly in association with the body, all but one of the deposits is an amulet of types found across England, and all included with female inhumations. The exception is a single deposit of a corvid skeleton, identified as a crow or rook, included in the grave of a young man (Burial 91). The bird skeleton was clearly placed next to the upper left leg of the body. Other items included in the grave were an iron knife and a bell, marking this as an atypical burial, and the burial was located at the outskirts of the cemetery (Sykes 2014: 119). No deliberate inclusion of corvid remains has been recorded from any other Anglo-Saxon burial surveyed (Chapter 5). It is likely that corvids were too potent or too negative a symbol for regular inclusion in burials, and the unusualness of this burial is likely to indicate a person with a specific role or powers in society (Sykes 2014: 119). However, this could also indicate a late survival or even revival of Roman rituals. Corvids were more commonly used in ritual in the Iron Age and Roman periods (Serjeantson & Morris 2011), although this primarily took the form of inclusions in pit and well deposits, rather than alongside human burials. Gloucestershire in the west is located at the limits of Anglo-Saxon influenced culture, and in the former heartland of fourth century Roman Britain. Further study of cemeteries in the west may yield more examples of the intersection of Anglo-Saxon practices with earlier rites.

Burial	Deposit	Notes	Age of human	Sex of human
14	beaver tooth	mounted pendant	14-16yrs	f
18	beaver tooth	mounted pendant	25-30yrs	f
78	canid tooth	perforated pendant	25-30yrs	f
91	corvid, complete	immature	20-25yrs	m
171	pig tooth	perforated pendant	11-12yrs	unk

Table 6.16: Animal bone inclusions from inhumations at Butler's Field cemetery, Gloucestershire (Boyle et al. 1998).

6.3.2 Cremations

Any discussion of regional variation in cremations is inevitably hampered by the sparseness of the evidence available and the continuing lack of effective zooarchaeological assessment for many older sites. While similarities between Sancton and Spong Hill suggest a consistency of practice within the Core Cremation Zone, the outstanding question is whether similar practices pertained outside of this area. Again, the majority of evidence discussed derives from the eastern England dataset, with comparisons to selected cemeteries outside of this area. To an extent, this also reflects the availability of data, with a recent survey suggesting that the majority of surviving cremation assemblages and analysis derive from the eastern England area (McCullough-French 2017), with evidence much poorer outside of this area.

Table 6.17 shows the prevalence of animal bone in cremation cemeteries, organised by present-day county. While taphonomic disturbance has affected prevalence, it is not a determining factor except in the case of a few cemeteries where disturbance is particularly severe, which have been excluded from this table (see Chapter 3). The majority of cemeteries contain animal remains in between 20% to 50% of cremations. In three of the four Suffolk cemeteries (Sutton Hoo, Tranmer House and Lakenheath) prevalence of animal bone is atypically high, reaching around 60%-70% of cremations. In the case of Sutton Hoo and Tranmer House, this can partly be attributed to the small size of the cemetery, and partly to the high resource investment displayed in these burials (Fern 2015: 217; Carver 2005); while Lakenheath also contains few cremations, many of which appear to be partial deposits consisting mostly of animal remains, and can also be considered atypical (see Section 6.1). By contrast, all of the cemeteries in Essex and Cambridgeshire appear to show a distinctly low prevalence of animal bone. This is not easily attributed to taphonomy. The cemeteries from Essex and Cambridgeshire differ from those within the Core Cremation Zone in that they are predominantly smaller and mixed rite, compared to the large urnfields within Norfolk and Lincolnshire, and the dip in prevalence of animal remains would appear to indicate differences in practice between the Core Cremation Zone and its periphery. However, the differences in prevalence are relatively slight, and the small number of cemeteries means that this cannot be considered in any way conclusive.

County	Site	No. cremations	% with AB	% with multiple AB
Norfolk	Spong Hill	2323	46.4	8.4
	Morningthorpe	9	22.2	0
	Illington	200	20.0	3.5
	Field Dalling	107	16.8	5.6
Suffolk	Lakenheath	8	75.0	50
	Sutton Hoo	8	75.0	62.5
	Tranmer House	13	69.2	46.2
	Snape	51	23.5	0
Lincolnshire	Baston	20	25.0	0
	Elsham	566	45.2	unk
	Cleatham	977	38.9	unk
Cambridgeshire	Great Chesterford	33	15.2	0
	Minerva	30	10.0	0
Essex	Rayleigh	145	6.9	0
Hampshire	St Mary's Stadium	28	25.0	7.1
Gloucestershire	Butler's Field	29	20.7	3.4

Table 6.17: Prevalence of animal bone inclusions from cremation cemeteries in eastern England. St Mary's Stadium, Hampshire and Butler's Field, Gloucestershire, are included for comparative purposes.

One further pattern of note is that, excluding the three atypical Suffolk cemeteries, there appears to be a correlation between cemetery size and prevalence of animal bone, with the highest proportions occurring consistently within the largest cemeteries. The three cemeteries in the dataset comprising more than 500 cremations – Spong Hill, Elsham and Cleatham – all have animal bone in more than 35% of cremations, while the prevalence in all other sites falls below 30%. It is difficult to be confident that this is not a function of inter-observer variability, with the analyst becoming more practiced at recognising animal bone from a particular cemetery with the more cremations studied (see Section 3.4). However, if this is a genuine pattern, it may indicate that these particularly large cemeteries differ from the smaller cemeteries in more than simply quantity.

Due to the lack of data and absence of effective summary of cremation practices outside of eastern England, it is difficult to comment on how typical these patterns are compared to the rest of England. Sancton, as noted earlier, is located at the northern end of the Core Cremation Zone and shows an equivalent prevalence to cemeteries within this area (39.5%, McKinley & Bond 1993). Cemeteries from the Midlands, south and west of the country have also been shown to have prevalence of animal bone similar to the smaller cemetery sites within the Core Cremation Zone (c.20-25%), leading to the conclusion that there is little difference in practice visible from prevalence rates (McCullough-French 2017). In terms of overall frequency of inclusion of animal remains, then, areas outside of the Core Cremation Zone may be more similar to those within the eastern England heartlands than might be initially thought.

Table 6.18 shows overall frequency of taxa in cremation cemeteries both within and outside of eastern England. There is a broad consistency to the use of taxa across most of the cemeteries included, with horse and domestic animals by far the most common inclusion, and all other taxa – deer, birds, dogs, and other wild taxa – infrequent where they do occur, and absent from many cemeteries. Diversity is unsurprisingly highest in the cemeteries with the largest number of cremations containing animal bone, with Spong Hill yielding more than 14 different taxa, and Illington and Field Dalling 8 and 6, respectively; while the smaller mixed sites yield between 2 and 5 different taxa. Lakenheath, Sutton Hoo and Tranmer House show surprisingly high diversity for their size, with 5 different taxa present at each of the sites, again indicating the relatively wealthy nature of these assemblages and the high proportion of cremations containing multiple animals.

	Norfolk			Suffolk				Cambridgeshire		Essex	Gloucestershire	Hampshire	Warwickshire	Leicestershire
	Spong Hill	Illington	Field Dalling	Lakenheath	Tranmer	Sutton Hoo	Snape	Gt Ch	Minerva	Rayleigh	Butler's Field	St Mary's	Bidford	Thurmaston
Horse	215	11	4	4	4	3							1	
Sheep	169	10	6	3	4	2		2	2	4	3	1	3	3
Cattle	69	6	2		4	1				1	1	1		
Pig	81	3	1	1	1	2			1		1	2		1
Dog	19	1		1		1								
Deer antler	10	2				1								
Deer other			2	1										
Chicken	5	1	1								1		1	
Goose	2												1	
Wild bird	4	1												
Hare	1													
Bear	5													
Fox	5													
Beaver	1													
Amulet	22	2			1	1								
Fish	1													
Bird	5	1			1			2						1
medium mammal	253	6	8	1	4	1						2		
large mammal	144	6	2		3	2		1						1
small mammal	5				2					1		1		
No of taxa	14	8	6	5	5	5		3	2	3	4	5	4	4
Total Crems	2380	200	107	7	13	8		33	30	145	29	?	25	60

Table 6.18: Taxa in cremations within eastern England dataset, and comparative sites (Boyle et al. 1998; Birbeck 2005; McCullough-French 2017).

While animal use at first sight appears to be relatively homogenous between sites, some slight indications of regional or local variation in use do exist. Elements of deer other than antler are found infrequently, and have not been identified from Spong Hill, Illington or Sancton. However, at Field Dalling, roe deer skeletal elements were found in two cremations, although in one case the identification is still uncertain. While Field Dalling is located solidly within the core cremation zone, its position near the north Norfolk coast is relatively isolated, and therefore perhaps more subject to local practices developing than at sites further inland. However, one fragment of red deer mandible has also been identified from one of the cremations at Lakenheath, indicating that the inclusion of deer is not exclusive to Field Dalling. While it is possible that these are examples of local practice, it can also be argued that these two or three examples reflect particular individual circumstances rather than any broader pattern, and it is difficult to argue for substantial local patterning while the evidence is so slight.

One further potential pattern lies in the frequency with which horses are incorporated into cremations in different regions of the country. Horses are the most common taxon included in cemeteries in Norfolk, Lincolnshire and Suffolk (Section 5.2), although, as has been discussed previously, medium-sized mammals included as food offerings may in fact have been the most common category of animal included (see Section 5.1; 5.3). Outside of this area, the inclusion of horses in cremations appears to be much more infrequent. None of the cemeteries in Essex or Cambridgeshire contained horse remains in any of the cremations, although Fern reports one high-status cremation containing horse from Little Wilbraham, Cambridgeshire (Fern 2007). Fern's 2007 survey reports horses only from four sites outside of eastern England. Of these, two are clearly high-status burials (Asthall Barrow, Oxon. and Roundway Down, Wilts.), and one, Millgate, is located in Nottinghamshire, near to the current county boundary with Lincolnshire. The final site, Park Lane in Greater London, is well out of the eastern England zone, but serves only to demonstrate that horse remains have been identified in cemeteries outside of this area. Similarly, horse remains have been identified from one cremation at Bidford-on-Avon (McCullough-French 2017), but this was the only identification of horse from McCullough-French's survey of eight sites (146 cremations) in the Midlands. In cemeteries where horses have not been identified, the focus appears to be instead on domestic animals – particularly sheep, with cattle and pig also identified – and birds. While it is difficult again to be confident that this is a valid pattern, considering the small size of the dataset and non-systematic survey outside of eastern England, it raises the possibility that inclusion of horse in cremations was considered either less important or less achievable outside of the eastern England area. It is also worth noting that this pattern, if valid, does not follow the boundaries of the Core Cremation Zone, with the Suffolk cemeteries falling outside of this area but still yielding high frequencies of horse, suggesting that different aspects of mortuary practice may follow different regional patterns.

Finally, it is worth noting that much of the diversity between inhumation cemeteries in fact lies neither in prevalence nor in species diversity, but in the age and sex of the humans with which the animals are included. While no similar differences have been noted between cremation cemeteries, the difficulties in attributing both age and sex to cremated human bone must be highlighted as a potential complicating factor. Similarly, both the quantity of animal bone and the frequency with which it is included is much greater in cremations than in inhumation burials, and ability to determine what portions of the animal were included is significantly limited by the taphonomic processes associated with cremation. If there are patterns within the cremations which may be operating on the local or regional level, the evidence from the inhumations may therefore lead us to expect that these will be associated with age and sex. The lack of obvious patterning along these lines indicates either that it does not exist, or conversely, that it is operating on a level we cannot currently see, as discussed above (Section 6.2).

6.3.3 Comments

Regional variation in early Anglo-Saxon England has been recognised from very early on, and more recent studies of other material culture have started to demonstrate the complexity of this variation, with "regional" grave goods increasingly shown to cross traditional tribal boundaries (Higham & Ryan 2013). The regional variation in animal remains in mortuary practice has rarely been considered, with key sites such as Spong Hill taken as typical of the entire country. While any consideration of regionality is necessarily hampered by the lack of data, the results which we can see strongly suggest this is too simplistic an approach. As Chapter 5 has demonstrated, different categories of animals are used differently in mortuary practice, according to their perceived function, symbolism and availability. Similarly, the practices associated with some categories such as amulets appear to have had a wide geographic spread, while others – like those associated with domestic animals – may have been mediated more locally. Cremation burial appears currently to have less regional diversity than can be seen in inhumation burials, although it is possible that this is an issue of visibility rather than anything else. However, even within a region, a large urnfield cemetery such as Spong Hill cannot be taken as entirely typical of either a smaller cemetery such as Field Dalling, or a wealthier cemetery such as Tranmer House.

Clearly, an assessment which has systematically considered cemeteries only from eastern England has barely scratched the surface of any regional variation, and further wide-ranging surveys, especially of animal remains in inhumation burials, are an important area of further research. One further question, however, might be how far the broad "commonality of practice" shown by cremation cemeteries in England expands. It has already been mentioned that horses are included much less frequently in cremations elsewhere in Europe, suggesting that this is a practice unique to Anglo-Saxon England. Similarly, a survey of cremation sites in the Netherlands appears to indicate differences in the use of domestic animals, with cattle more often present than sheep/goat (Prummel 2001), potentially indicating that the preference for sheep as a food offering is also local to England (Section 7.2). Little systematic survey again has been carried out on cremation cemeteries across Europe, but evidence of connections between England and the Continent in this period suggest that these may be productive comparisons to be making.

6.4 Power, Wealth and Temporality

To this point, the period of the 5th-7th century has been discussed as a whole, without taking account of any temporal changes within this 300 year span. However, as discussed previously, the later 6th and 7th centuries saw substantial changes to burial practice, with emerging social complexity and the adoption of Christianity influencing the nature of rites and of grave goods. Dating specific burial practices – such as the inclusion of animal remains – and locating any changes across this period is problematic, as individual graves can rarely be dated precisely. Instead, cemeteries as a whole are generally assigned a date range, within which burials are sometimes assigned to one or more phases. The problem is particularly acute within cremation cemeteries, where – excepting Spong Hill – few can be dated more precisely than to the 5th or 6th centuries. A major recent redating project (Bayliss & Hines 2013) has the potential to significantly clarify and refine understanding of furnished burial from the mid-6th century onwards, particularly in suggesting an abrupt end to the practice in the later 7th century rather than the long tailing-off into the early 8th century indicated by previous authors (e.g. Blair 2005). While the potential of this project is therefore significant, its results are currently still in the early stages of reflection and acceptance.

Regardless of the difficulties, two questions can productively be considered. Firstly, are there changes in the inclusion of animal remains in burials into the 7th century, following the reintroduction of Christianity and notable concurrent changes in burial practice, and can an endpoint to the practice be defined? Secondly, how are animal remains included within the elite or “princely” burials which emerge from the mid-6th century onwards? The focus of these two questions is specifically towards the end of the period in question. As cremation sites have tended to act as “type sites”, the use of animals in the earlier part of the period is relatively well-defined, whereas any developments after this period, typically associated with inhumation burials, remain relatively unknown.

6.4.1 Princely burials

For the purposes of this survey, high-status burial is defined as any burial which implies a significant labour cost to its construction, and includes primary burial within a barrow (excluding therefore secondary burials within the barrow, or those inserted into older prehistoric barrows); chamber burial; ship burial, etc. From the mid-6th century onwards, high-status burial of individuals becomes more common in the burial record, although examples of both chamber and barrow burial are present in the record of eastern England before this time. Table 6.19 lists all high-status burials falling within the eastern England dataset and dated specifically to the 6th century or later, following Pollington's (2008) extensive survey of barrow and high-status burials. The high status burial of the "Prittlewell Prince", excavated in 2003, is excluded from the main dataset as its excavation history means it counts as an isolated burial; but is included here as it falls within the geographic scope of eastern England, although it should be noted that this burial is as yet only published in an interim report (Hirst 2004).

This gives a fairly limited total of 17 high-status burials from sites within the eastern England dataset, with the barrow cemetery at Sutton Hoo accounting for almost half of the dataset. These can be seen to fall into three categories: male inhumation burials of the 6th-7th century; cremation burials of the late 6th century and early 7th century (Sutton Hoo only); burials of both sexes from the 7th century onwards. The inclusion of animals in each of these categories is equally relatively clear-cut. Of the six high-status male inhumations, all four which contained animal remains contained inhumed horses or partial horses, in two cases with a portion(s) of sheep. The inclusion of horses in high-status male "warrior" graves is well-known and has already been discussed extensively (Section 5.2), but it is notable that no male inhumation graves contain animal remains which do not fit this pattern. However, not every "princely" burial contains a horse. No animal remains have been found from the Prittlewell burial, a burial which employs Christian symbolism relatively extensively among the other grave goods (Hirst 2004). Bone preservation is poor at Prittlewell, with no surviving human skeleton, and since the burial is not yet fully published it is difficult to rule out the possibility that more subtle

Site	County	Category	Burial	Type	Date	Rite	Animals?	Person
Lakenheath	Suffolk	High-status male		barrow / coffin	6th	inhumation	horse + sheep	m
		High-status male		barrow	6th	inhumation	horse	m
Snape	Suffolk	High-status male		ship burial	mid-6th	inhumation	horse head?	m
Sutton Hoo	Suffolk	Cremation	mound 3	barrow	late 6th	cremation	horse	m
		Cremation	mound 4	barrow	late 6th	cremation	horse	m + f
		Cremation	mound 5	barrow	late 6th	cremation	large + small mammal	m
		Cremation	mound 6	barrow	late 6th	cremation	sheep + pig + large mammal	
		Cremation	mound 7	barrow	late 6th	cremation	horse + cow + sheep + pig + antler	
		High-status male	mound 17	barrow	early 7th	inhumation	horse + sheep	m
		High-status male	mound 1	ship burial	early 7th	inhumation	uncertain - cremated bone	m
Prittlewell	Essex	High-status male		chamber	early 7th	inhumation	none	m
Coddenham	Suffolk	Mixed 7th century	grave 30	chamber / bed-burial	early 7th	inhumation	none	f
		Mixed 7th century	grave 1	chamber	early 7th	inhumation	none	m
Westfield Farm	Cambridgeshire	Mixed 7th century	grave 1	barrow	7th	inhumation	none	f
Bloodmoor Hill	Suffolk	Mixed 7th century		barrow	late 7th	inhumation	none	f
Buttermarket	Suffolk	Mixed 7th century	2339	chamber grave	7th	inhumation	organic stain	?juv
		Mixed 7th century	4275	chamber grave	7th	inhumation	none	f

Table 6.19: Barrow and chamber burials from the 6th century onwards, eastern England.

traces of animal remains are as yet unreported. Similarly, no animal remains were reported from the famous Mound 1 ship burial at Sutton Hoo, although it should be noted that unidentified cremated bone was present on a tray within the burial.

The second category, of late 6th and 7th century cremations under barrows, is restricted in eastern England to Sutton Hoo. Each of the five cremations which have been excavated and reported from this site contains at least one animal taxon, with the largest (mound 7) containing at least five separate taxa (Bond 2005; Gejvall 1975). Again, horse appears to be the most significant animal, identified from three of the cremations, with the remaining two containing unidentified large ungulate bone. Domestic animals (sheep, pig, cattle) and unworked deer antler are also present, indicating a relatively typical cremation assemblage.

Cremation at this period is generally considered a deliberately archaising practice, legitimising power through association with the past (Carver 2005). In the case of Sutton Hoo, this can also be seen as a practice of long duration, as cremation at the adjacent Tranmer House cemetery continued through the mid to late-6th century, and included animals to a similar extent. The 7th century cremation at Asthall Barrow, Oxfordshire (Dickinson & Speake 1992) is another useful example of this practice, and similarly included a horse with the human remains. The inclusion of animals within the cremation pyre seems to have been an integral part of this legitimation, offering the possibility to create a powerful and dramatic symbol, particularly at a point where inclusion of animals in ordinary burials was increasingly uncommon (see below).

The final category is that of chamber graves and barrow burials, largely associated with females, dated to the 7th century. These burials do not contain animal remains as a means of displaying or legitimating power. Only one of the six recorded graves – one of the chamber graves from Buttermarket – contains any evidence of animal remains. This consists of an organic stain, representing probable animal remains which were placed outside the chamber, suggesting that even where animal remains were included in these burials, they were not considered an integral part of the grave display. The lack of any ostentatious display of animal remains in these burials is arguably linked to the association of animals with pre-Christian practices at a point where Christian symbolism was increasingly adopted by the wealthy and powerful. The burial of a young female under a barrow at Westfield Farm, Ely, is dated to the later 7th century and includes explicitly Christian iconography in the form of cross-shaped brooches, indicating that in this example, burial identity is heavily focused towards membership within the Christian church (Lucy et al 2009). While it is by no means clear that animal inclusions and the incorporation of Christian symbolism are mutually exclusive, it appears that in most cases the inclusion of animal sacrifices is part of a rite which demonstrates power by association with earlier pre-Christian practices, and as such is perhaps less appropriate for burials which are aligned with a new and antagonistic source of spiritual power. Animal inclusions remain only one choice among many in terms of what symbols of power, or aspects of cosmology, are selected for the materialisation of status in the burials of the rich and famous.

6.4.2 Defining an end-point: Changes through the 6th and 7th centuries AD

High-status burial, therefore, appears to show a clear pattern whereby animal remains were increasingly excluded from burials from the early 7th century onwards, when Christian iconography and attitudes were increasingly employed, ousting older burial traditions and beliefs. Christianity was established in East Anglia by approximately 630AD (Hoggett 2010), and similarly in the early 7th century in Lindsey (Bede, *trans.* Sherley-Price 1990), although the spread of Christianity as recorded involves the conversions of the wealthy and powerful, and the establishment of churches and monasteries in their kingdoms (Blair 2005). The impact of Christianity at a more ordinary level is harder to track, and it has been suggested that syncretic folk beliefs and practices may have persisted well into the later Anglo-Saxon period (Jolly 1996; see below).

The impact of Christianity on burial practices as a whole is similarly a matter for debate, although there is some consensus that animal sacrifice at least was frowned on in a Christian world (see below). The recent redating project of later Anglo-Saxon burial suggests that furnished burial as a whole ceases by the last quarter of the 7th century, more or less concurrent with the Synod of Whitby (664AD; Bayliss & Hines 2013). Prior to this point, there is a distinct trend in the 7th century for sparsely furnished burials with increasing standardisation of styles of grave goods, termed “Final Phase” and generally loosely associated with Christian influence. The question of the extent to which animal burial persists in ordinary burial into the seventh century is therefore pertinent.

The mid-6th century saw substantial changes in burial practice, the most significant of which is that cremation decreased in popularity as a burial rite across England, being superseded by furnished inhumation (Higham & Ryan 2013; see also Chapter 1). Considering the relative rarity of animal remains in inhumation burials compared to cremation burials (see above, Section 6.1), this necessarily means that the number of graves containing animal bone in the second half of the period is greatly reduced compared to the earlier 5th and 6th centuries, and therefore prevalence is a difficult measure to use. Table 6.20 shows the cemetery sites in the eastern England dataset which are dated, either partially or completely, to the 7th century, and the presence or absence of animal bone at these sites. As ever, preservation is poor at several of the largest sites in this dataset (e.g. Harford Farm, Norfolk), and therefore the absence of animal bone from these sites means very little. Similarly, the very low overall prevalence of animal in inhumation cemeteries means that its absence from smaller cemetery sites, such as Westfield Farm (15 burials), can easily be attributed simply to statistical likelihood. Several larger cemeteries with reasonable preservation, such as Coddenham and Bloodmoor Hill, have not been recorded as containing animal inclusions in the burials, although since several cemeteries with similar numbers of inhumations from the 5th and 6th centuries (e.g. Edix Hill (Barrington), Cambridgeshire; Westgarth Gardens, Suffolk) also contain no animal bone in burials, this may not relate to their later date.

Cemetery	County	Preservation	Animal bone (inhumation)	Inhum # (7th century)
Harford Farm	Norfolk	poor	none	46
Coddenham	Suffolk	variable	none	50
Sutton Hoo	Suffolk	acceptable	1	8
Buttermarket	Suffolk	poor	2	71
Springfield Lyons	Essex	poor	none	39
Sheffields Hill	Lincolnshire	poor	none	71
Nazeingbury	Essex	acceptable	1	192
Westfield Farm, Ely	Cambridgeshire	good	none	15
Water Lane, Melbourn	Cambridgeshire	good	1	53
Bloodmoor Hill	Suffolk	acceptable	none	28

Table 6.20: Cemeteries in eastern England with burials dated to the 7th century.

Interestingly, animal bone is present at two sites dated to the 7th century – namely, Buttermarket and Castledyke South. Castledyke South has been mentioned previously as one of the largest assemblages of animal remains from a single Anglo-Saxon inhumation cemetery in the dataset. The majority of animal remains from Castledyke South are attributed to graves in Phase 2B (7th century), with the exception of a single amulet, dated to the 6th century. Unfortunately, no more specific dates than "7th century" were available. At Buttermarket, the possible animal deposit associated with a chamber grave has been mentioned previously (above); the site also yielded the head and several joints of a pig in the grave of an adult male. Again, this cannot be dated more specifically than 7th century at present. Additionally, in neither cemetery does the use of animals appear particularly atypical compared to earlier periods. Table 6.21 shows the animal inclusions from all inhumation sites in the dataset, listed in order of date. It is arguable that between them Castledyke South and Buttermarket show an increased use of pig and domestic bird in graves, compared to the earlier focus on sheep remains. However, the dataset is far too small to make any judgement as to whether this is a result of chronological change, geographical variation

	Lakenheath	Castledyke South	Gunthorpe	Oakington	Snape	Sutton Hoo	Castledyke South	Buttermarket
	5th-7th	6th	6th	6th	mid-6th	late 6th	7th	7th
sheep	8					1	2	
horse	2				1	1		
cattle	1			1				
pig	1						1	1
chicken	1						4	
duck				1				
curated bone		1						
medium mammal			1		1			

Table 6.21: Animal inclusions in inhumation burials in eastern England, in order of date.

or simply local practices. The differences in patterns of inclusion between Castledyke and Lakenheath are discussed at length (above). Regardless of the changes in the particular species used, it is still clear that the focus remains on domestic food animals as inclusions.

Outside of eastern England, it is similarly clear that animal remains continued to be included in burials into the 7th century, in both ordinary and less ordinary burials. Alongside Sutton Hoo, Fern reports a further two horse burials from the first half of the seventh century (Caenby, Lincolnshire; Hardingstone, Northamptonshire) (Fern 2007). The inclusion of a goose wing in a male grave from Farthingdown, Surrey, is also dated to the seventh century (Wilson 1992; Lucy 2000). Of the thirty-odd examples of curated bone reported in Meaney (1981), more than a third is dated specifically to the seventh century (Table 6.22). These are all perforated or mounted amulets, as are most commonly found in inhumation burials. Beaver incisor amulets have been noted specifically as occurring most often in burials from the 7th century (Meaney 1981), but while these are most common, examples of most other types of perforated amulets are also present, including canid and pig teeth, and one sheep patella.

Curated bone		5th century	5th/6th century	6th century	6th/7th century	7th century	unknown	Total
White-tailed eagle	claw		1					1
Pig	canine			5		2	3	10
Dog	canine			1		1		2
Dog/fox	canine					1		1
Canid	canine		1	1				2
Beaver	Incisor			1	1	5	1	8
Horse	tooth						1	1
carnivore	tooth		1					1
carnivore	claw		1		1			2
Fish	vertebrae					2		2
Carpals/tarsals					1	1		2

Table 6.22: Curated bone from Meaney (1981), in order of date.

By contrast, it is worth noting that the inclusion of animal remains in cremations may have ceased as a practice in ordinary cremations dating to the late 6th and 7th centuries. Unlike eastern England, cremation continues into the 6th and 7th centuries in southern England, with the cemeteries of Apple Down in Sussex and St Mary's Stadium, Hampshire containing especially late examples (Down & Welch 1990; McKinley 2005). No animal bone has been reported from any of the fifty-six cremations at Apple Down, dated from the late 5th to the 7th centuries AD (Down & Welch 1990). The weight of cremations from this site is extremely low, with most weighing less than 100g, which is likely to have acted to reduce the prevalence of animal bone (see Section 3.4) – however, it seems insufficient to explain a complete absence. By contrast, animal bone is present within seven of the 28 cremations from St Mary's Stadium, which are dated to the 6th and 7th centuries, indicating a similar prevalence to many of the earlier cremation sites in eastern England, and a similar species distribution, albeit focused primarily around medium-sized taxa (sheep & pig) (see Section 6.3, above). While significant changes may have been occurring in terms of burial practice during the 7th century, it is clear that these did not entirely preclude the inclusion of animals in the graveside repertoire from the outset. Instead, the inclusion or non-inclusion of animals seems to be as dependent as usual on a mixture of belief, social practice, and factors which were specific to each particular, local situation.

6.4.3 Pagan practices in a Christian Age

While the 7th century can be described as a time of transition in terms of burial practices, the beginning of the 8th century sees the end of furnished burial and general adoption of a "Christian" burial practice of unfurnished, east-west inhumation, often including coffin or shroud burial. The demise of the grave display is generally accepted to also signal the end of inclusion of animal remains in burials. While the project did not systematically survey any cemeteries with a start date after the 8th century, several late inclusions of horse remains in mortuary contexts have already been discussed (Section 5.2), suggesting the survival of some of these beliefs. Most notable is the horse tooth pendant from a burial at Nazeingbury, which signals the possibility that personal amulets may have been incorporated into ostensibly

Christian burials. This, however, is the only unequivocal example of animal remains within a post-7th century grave of which this author is aware, with no other examples listed in any surveys (Fern 2005, Meaney 1981, Wilson 1992 and Lucy 2000), and no examples present from large later Anglo-Saxon sites such as Caister-by-Yarmouth (Section 3.3). While the 8th century does therefore appear to mark the end of animal inclusions, albeit with rare exceptions, following the end of cremation in the 6th century, the prevalence of animal inclusions in inhumation cemeteries is so low that it can hardly be termed the end of a thriving practice.

The impact of Christianity from the late 7th century onwards was to put a full stop to a dying practice of using animal sacrifice as a part of marking end-of-life transitions. However, the symbolic importance and even mythological importance of animals appears to have persisted in many other respects. Early "popular" Christianity readily absorbed aspects of previous folklore and belief which could be reframed into a Christian narrative, where the power the rites invoked came from the Christian God rather than from elsewhere (Jolly 1996). The use of animals in foundation rituals has already been mentioned as a long-standing practice which continued to operate within a Christian context (see Section 5.2). Animals could be agents of disease, with inexplicable illnesses often attributed in later Anglo-Saxon medical texts to "worms" – an emic category which covered everything from earthworms up to dragons (Jolly 1996; Pluskowski 2011). Animals could also form part of the cure. Ingredients such as fawn's skin, porpoise skin, and the more prosaic sheep-grease are all mentioned as part of cures in the 9th century Bald's Leechbook (Jolly 1996). Other aspects of animal-related practice, however, were apparently incompatible with a Christian context, and ascribed instead to serving demonic powers. A story of St Macarius, related in the writings of Aelfric in the 10th-11th century, also recounts the curing of a girl who had transformed into a mare, in an apparent reflection of animistic human-animal transformations – the good Christian St Macarius, however, is at pains to point out that the transformation he cured was nothing but a delusion by the Devil's power (Jolly 1996: 86). Interestingly, animal sacrifice is also described in these terms, with Bede (8th century) commenting that the pagans “sacrifice many cattle to demons” (*trans.* Sherley-Price 1990; Bond & Worley 2006). Practices which could not readily be adopted into Christian practice were demonised, and ceased to be part of social norms. In a time of changing cosmologies, the highly visible and already diminishing practice of including animals in mortuary ritual is an obvious candidate to be relegated to the past – its social functions of marking the end of life, community feasting, ensuring remembrance and dedicating property to ensure a safe passage to the afterlife readily adopted by the Church (Lee 2007).

7: Discussion

What is the role of animals in mortuary practices in Anglo-Saxon eastern England in the 5th-7th centuries? This is the initial question set out by this thesis, and throughout the view has been taken that the use of animals in graves has been determined by a mixture of cosmological beliefs and social factors. Even in a geographically-limited area, Anglo-Saxon England in the 5th-7th centuries was socially complex and full of varying beliefs and mortuary practices. Rather than assuming a single meaning for animal inclusions which can be “read” from the grave, both meaning and role are instead contingent on the person, the place and the setting within which they occur.

7.1 Dataset

One of the most important findings of this thesis is that it has indicated the deficiencies of a dataset which was initially expected to be much better. The available evidence, and therefore the conclusions which can be drawn from it, have been heavily reduced by antiquarians, curation policies, poor bone preservation and poor recording – a conclusion echoed by McCullough-French (2017), who highlighted similar and even more substantial problems across Midlands counties.

The dataset used in this study indicates the potential diversity of Anglo-Saxon cemetery sites, including within the selected geographic area cemeteries of varying sizes, dates, rites and statuses. There are significant differences in practice between cremation and inhumation burial rites, but in addition, many more minor possible differences have been noted, including differences in frequency of horse inclusion within and outside of the Core Cremation Zone; higher frequency of animal inclusion in larger cemeteries; local practices such as the inclusion of roe deer as a meat offering at Field Dalling, or the association of chickens with females at Castledyke South; and the high frequency of cattle in cremations at Tranmer House, which is likely to have been linked to the high-status of the cemetery. However, numerically, the dataset is dominated by the cremations from Spong Hill, which dwarfs any other sites in terms of size and stands out also for the quality of its reporting. The three next-largest cremation sites in the dataset – Mucking, Elsham Wolds and Cleatham – are either awaiting full analysis, or have yielded poor data on account of poor preservation, meaning the discrepancy between Spong Hill and the rest of the cremation dataset is even more marked. Inhumation burials, meanwhile, include animal remains with such low frequency that the two sites in the dataset with the most inclusions – Lakenheath and Castledyke South – threaten to have a similarly disproportionate effect in defining our understanding of how animal remains are used in inhumations. While these two sites have been noted as using animals in different ways to each other, the lack of other inhumation cemeteries with appreciable numbers of animal inclusions mean it has been difficult to define whether the differences are due to date, locality, or one or other site representing a deviation from common practice. New evidence from inhumation cemeteries of this date in eastern England, particularly ones with good preservation, will therefore be highly important in confirming or challenging what has been concluded here.

Recognition of the unexpected poverty of the dataset has several implications for future work and strategy going forward. Firstly, the nature of archaeology as a field is such that new sites are being excavated across the country all the time, and therefore the amount of good data available should expand as a matter of course. However, this is reliant on effective on-site recording and post-excavation reporting of animal bone from cemetery sites. Animal bone from the majority of inhumation graves can only be identified as securely associated with the grave if its location has been recorded during excavation. As well as more conventional deposits, placed alongside or with the body, this might include animal bone placed in a distinct lens deposit higher in the backfill, particularly in chamber or other high-status graves, and unburnt bone placed alongside cremation urns, both of which can easily be assumed to be residual. At a post-excavation stage, it is important that any suspected grave inclusions are not detached from their contextual information in zooarchaeological reports and discussed in a block, but instead are treated and reported in a similar way to Associated Bone Groups (e.g. Nicholson 1998). Residuality and intrusion are inevitable problems in defining grave inclusions, and several methodological solutions to this have already been suggested (Section 3.3). However, particularly where a decision cannot be reached readily, the imperative is that any potential grave inclusions should be reported in sufficient detail that they can be included in later syntheses where their integrity will be perhaps be more evident.

High-profile site reports and articles (e.g. Bond 1996, Bond & Worley 2006) mean that cremations from the Anglo-Saxon period are assessed for inclusions of cremated animal bone as standard. However, the number of zooarchaeologists trained and experienced in working with cremated bone is still relatively limited. The spectre of inter-observer variability has been raised in regard to cremation assemblages, and the probability is still that analysts more experienced with identifying cremated material will be able to identify and recognise more material than their less-experienced counterparts, potentially creating important discrepancies in the quality of evidence produced. The importance of training in this area could therefore be further explored.

Several ways are also apparent in which the available dataset can be expanded with the use of archived data. As discussed above, it is still the case that there is no effective comparandum to Spong Hill, in terms of size and quality of reporting. The largest cemetery from which both the human and animal remains have been fully assessed is Sancton, Yorkshire (Timby 1993), with 336 cremations compared to the over 2000 from Spong Hill. The full analysis of the animal remains from Elsham Wolds (566 cremations) and Cleatham (977 cremations), which is currently in progress, coupled with the existing analysis of the human remains from both sites (Squires 2011) will go some way towards providing this comparandum, particularly in terms of addressing age and sex questions which have arisen from Spong Hill. Equally, it is apparent from the reassessment of Illington (Section 3.4.1) that the older the analysis of animal bone from a cremation site is, the less reliable it is likely to be. Major cemetery sites with analyses dating back to the 1980s, such as Millgate, Nottinghamshire (Kinsley 1989) and Loveden Hill, Lincolnshire (Richards 1987) would make good candidates for reassessment with a view particularly to improved separation of the animal and human fractions of the cremation, particularly since it is likely that the cremated bone from these sites still currently exist, unlike so many other cremation sites.

Another avenue is to use the methodology developed here to collect data on inclusions from inhumation cemeteries from other areas of the country. As discussed in Chapter 2, the data from inhumations has never been fully summarised or analysed, due to its rarity, the difficulty of identifying genuine inclusions within burials, and the vast number of cemeteries to be checked for inclusions. However, the way animal remains were included in inhumation cemeteries clearly differs from cremation cemeteries, but also has provided here important indications of methods of inclusion (e.g. multiple portions of meat) which cannot easily be discerned from cremations. Several possibilities raised by this dataset – that inhumation practices are highly localised to cemetery; that most non-curated animal offerings tend to occur with young males – require more data to fully assess, but have the potential to significantly add to what is known about Anglo-Saxon inhumation burial.

7.2 Summary of Trends

7.2.1 At Home and Abroad: England, Scandinavia and the Continent

While it is clear that there is variation in the specific ways in which animals are used, it is also clear that there is a basic common repertoire of practice across Anglo-Saxon eastern England which is shared between both cremation and inhumation cemeteries, and which broadly reflects the frequency and nature of encounters with animals in life. Domestic animals make up the majority of all cemetery assemblages, with horses and sheep the most common taxa in almost all cases. Horses, dogs, chickens and geese tend to occur whole in inhumations and probably cremations, although horses at least may have been dismembered for inclusion on the pyre and chickens may have been beheaded, while cattle, sheep and pigs are more often included as selected butchered parts, both in cremation and inhumation graves. Wild mammals and wild birds are infrequent, and tend to be confined to species which were already valued for food, fur or other products – the familiar wild. Animals of the imagination – dangerous predators – were either absent from graves entirely or present only as curated bones. In terms of the process of creating the grave, there seems to be a performative focus around the grave (inhumations) and around the pyre (cremations), with the animals sacrificed in mortuary performance and then presented in a grave tableau.

The commonalities within eastern England are easier to see when compared to evidence from Scandinavia and the Continent of a broadly similar date. Prummel's survey of animals in Frisian mortuary practices from the 5th-9th centuries AD shows a significantly different taxonomy within cremation burials (Prummel 2001). No horses were identified from cremations within the sample – instead, cattle were the most common inclusion, followed by sheep. Sandpipers (*Scolopacidae)*, small wading birds caught for food, were also commonly included on pyres, although why these were included more frequently than other game birds species such as ducks is uncertain. The evidence from cremations contrasts to that from similarly-dated inhumation cemeteries in the same region, where horses and dogs are the most common animals present in the cemetery. In contrast to England, these are rarely associated with specific humans, more often occurring in separate graves within the cemetery. However, the amulets included in graves – wolf, horse and pig teeth, and antler, which were all worn as pendants; sheep astragali, used as gaming pieces – are almost identical to the range of amulets used across England.

Several other differences can be noted between England and Scandinavia and the Continent as a whole. Compared to both England and Frisia, "Scandinavia" and "the Continent" are much larger areas with a greater diversity of burials, and therefore a coherent and homogenous set of traditions cannot be expected with which the situation in eastern England can be "compared". Additionally, in Scandinavia, the tradition of including animals in burials extends well beyond the 7th century, with animals an integral part of burial rites until the 11th century (Jennbert 2011), adding a further element of temporal variation. As discussed previously (Section 5.5.2), the inclusion of bear remains in graves was substantially more common across much of Scandinavia than in England, and particularly in those regions where bears would have been encountered most often (Grimm 2013), suggesting that the symbolism of the bear, although widespread, may have been most significant where it was a living and encountered animal. Birds of prey – including goshawks, peregrine falcons, and merlins – were included as whole birds in burials from Scandinavia as well as on the Continent (Prummel 1997; Jennbert 2011). These birds are interpreted as trained hawks, and where they are included in graves, particularly in association with dogs and horses, they are considered to carry associations of elite hunting and status (Prummel 1992, 1997; Jennbert 2006). This is clearly in contrast to England, where there is little or no evidence that hawking was practised in the Early Anglo-Saxon period (Cherryson 2002), and this is reflected in the grave assemblages.

Both Scandinavia and the Continent also show a much more extensive use of animals in high-status burials than has been found in England. The largest number of taxa contained in any single cremation in the eastern England dataset was five (Sutton Hoo; Tranmer House), and no inhumation burial contained more than two taxa. By contrast, elite boat graves from the 6th-11th centuries in Sweden often contained up to five horses and up to four dogs, along with a domestic animal (cattle, sheep or pig) and sometimes a bird of prey (Jennbert 2011). Numbers of animals included with a single person could be much higher than this, with the ship burial at Ladby, Sweden, containing eleven horses and three or four dogs (Jennbert 2011: 103). Inclusion of multiple horses is also reflected on the Continent in the 5th century grave of the ruler Childeric I, where over twenty horses were sacrificed as part of the funerary rites (Fern 2007: 164; Müller-Wille 1970/1). However, none of these graves are as substantial as one cremation from Vibyhogen, Uppland, Sweden, where one man was cremated with a veritable menagerie, including six dogs, six horses, an ox, two sheep, a pig, a cat, chicken, goose, goshawk, eagle owl, cod, bear and lynx (Jennbert 2011:

102-3). These burials are clearly exceptional, but point towards a tradition of elaborate funerals with animal sacrifice on a grand scale as a means of materialising power. This was never adopted in the same way in England, where “elite” burials are more visible from the 7th century, and Christian influence perhaps meant that animal sacrifice was seen as archaising and consciously referencing earlier “pagan” traditions (Section 6.4).

7.2.2 Variation within England

At a basic level, then, it is possible to argue that there is a distinct “eastern English” tradition in how animals are included in mortuary practices, which differs in some or many aspects from other regional traditions in Scandinavia and on the Continent. However, in the absence of similar wide-scale surveys of regions within Scandinavia and Germany, it is difficult to tell how significant these differences are, or to comment further on the specific place of England within these Europe-wide traditions. From another angle, the level of variation in mortuary practices even within eastern England calls into question whether this in fact can be considered as an area with a particular “tradition” of animal use, or instead should be considered as sharing a range of traditions and practices which were drawn on in a variety of ways to demonstrate regional and social beliefs and identities. Differences in the roles of animals and the frequency of their inclusion exist between inhumation and cremation rites, between cemeteries, according to status, and according to date. Some practices are clearly widespread, such as the association of horses with “warrior” males (Fern 2007), and may be reflected elsewhere across Europe. In some respects, animal inclusions can be seen to have been used in a similar way to other Anglo-Saxon grave goods, not least in their reflection of status in burial, and in the trend for animals to be included more often with individuals past the age of majority. At some cemeteries, the inclusion of animals is restricted to the burial of individuals fitting particular age and sex categories (e.g. young men at Lakenheath), while at other cemeteries (e.g. Spong Hill, Illington) any age or sex patterning is far weaker. Above all, there appears to have been substantial scope for individual or community choice in what animals are employed in burial, and how they are used.

In contrast to the variability shown by other animal inclusions, curated bone appears for the most part to show distinct patterning which is common throughout the country and even into Europe (see above). As “curated items”, they straddle the boundary between animal bone – retaining associations with the living animals – and object, being items which would have been used by the living person and were not created exclusively for the grave. While valuable in indicating cosmological beliefs, curated bone can be seen to share characteristics with other Anglo-Saxon object sets. Perforated or mounted teeth and claws behave like other forms of jewellery or ornamentation, in that both are found exclusively with women and children (Stoodley 2011). Astragalus sets can be argued to have a broadly similar function to other gaming pieces, although they occur with a broader demographic (Section 5.7). Only the more unusual curated bones – those with no obvious function, such as perforated carpals or tarsals – are included with a variety of adults, and possibly show more local patterning.

Developments in burial practice in the 7th century and the re-introduction of Christianity also entailed changes in the ways animals were involved in mortuary rituals, although again the nature of these changes was localised, complex, and contingent on many different factors. There was an overall reduction in frequency of animal inclusions in burial in eastern England, which can largely be attributed to the disappearance of cremation burial as a common rite. Outside of eastern England, the situation appears more variable, with cremation burial persisting into the 7th and 8th centuries, with animals included at some cemeteries (e.g. St Mary’s Stadium, Hampshire (Stoodley 2010)) but apparently excluded at others (e.g. Apple Down, Sussex (Down & Welch 1990)). Some high-status burials chose to include animals as part of the grave assemblage, with horses and meat offerings as the most common inclusions, and cremation sometimes employed, potentially as a direct referencing of past “pagan” practices. In other high-status burials, animals were not included, with a different symbolic repertoire employed in these cases in signalling power and status. In terms of 7th century inhumation cemeteries, animal inclusions were entirely absent from some (e.g. Bloodmoor Hill), including those with strong Christian associations (e.g. Westfield Farm, Ely). However, in the case of Castledyke South, the inclusion of animals clearly remained an important part of burial ritual for some members of the community into this period. Like any other form of grave goods, the practices around the inclusion of animal remains in mortuary ritual were far from static between the beginning of the 5th and the end of the 7th century, fitting a broader pattern of variable burial rites during this period (Dickinson 2011).

7.3 What did this sheep mean to you (Part II)?

Animals in the Anglo-Saxon world were perceived as possessing different kinds of value in different areas of life and belief, with the animals particularly important in the imagination and in cosmology often those which were less important to everyday life, diet and economy (Chapter 2). As argued above, the meaning of animals in graves is multiple and contingent on circumstances, and may ultimately vary even between observers. However, some of the general implications of animals in graves can be reconstructed from the nature of practical engagements in Anglo-Saxon life and the physical evidence for how animals are used in the grave (Jennbert 2011). Jennbert (2006) has argued that Scandinavian graves contain within their grave goods a package of implications or of meanings which construct the identity of the dead – a “palimpsest of allusions” (Carver 2005: 312) of which animals are part: horses imply war and violence; birds of prey and dogs imply hunting; domestic animals imply wealth, negotiation, communication.

Figure 7.1 suggests a basic categorisation of animals in early Anglo-Saxon cemeteries. “Lived animals” are those which are kept on farms and within settlements, which are dependant or partially dependant on humans for their upkeep, and with which many people would have had practical experience on a regular basis. These animals form the majority of inclusions from all cemeteries, at least partly because they are the animals which are most accessible and manageable as part of a funeral. Their symbolism is based partly on generic uses or properties of the animal (e.g. domestic animals imply food), but also would have encoded more specific relationships (e.g. a

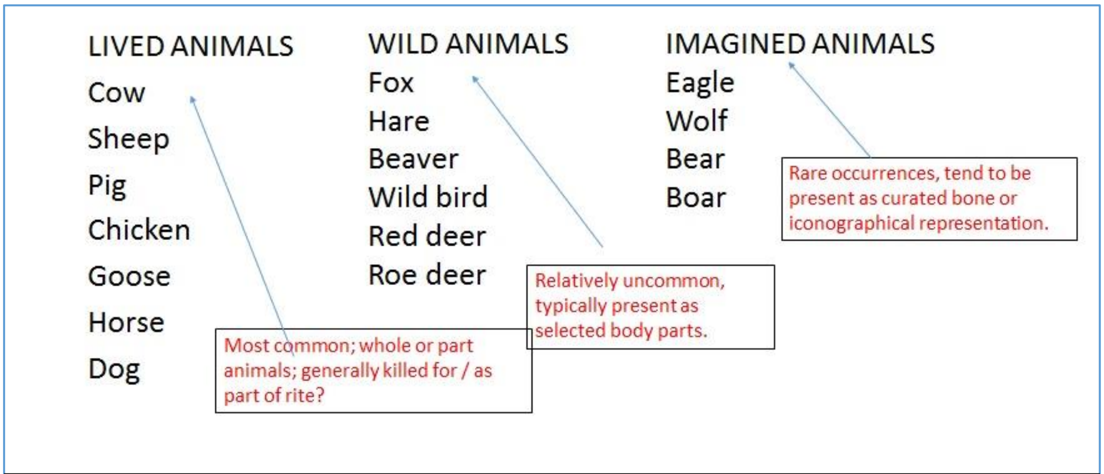


Figure 7.1: Categorisation of animals included in Anglo-Saxon burials.

sheep brought by a particular person or sacrificed from a specific flock). For some animals, particularly dogs, these specific associations may have been of more relevance than a generic species-level meaning. Of the animals commonly found in settlements and considered to be “domesticated”, only cats are consistently excluded from graves in England, potentially indicating a more ambiguous relationship with humans than other domestic animals.

Beyond the domestic sphere, several different types of relationship can be discerned. “The familiar wild” describes animals which are, for the most part, much less involved in relationships with humans, but would have been familiar sights within the landscape. They occur rarely within graves, and those which do are those which are among the larger animals found in the English countryside (deer, fox, hare, duck etc.) and for which there is evidence that they were hunted, however irregularly, for meat, furs or other body parts, or in the case of deer, their shed antler was collected from the forest for tools. Other taxa within the “familiar wild” - animals such as rodents, amphibians, passerines, hedgehogs - appear to be too far distant from direct human relationships to be put in a grave deliberately. Not all animals which fall into the category of “wild but hunted” have been found included in graves: otter furs have been found at Sutton Hoo (Carver 2005; Walton-Rogers 2007), but no other otter remains; badger remains are found occasionally on settlement sites and are mentioned in place names and other texts (Poole 2015b), but again are absent from burials. It is possible this is an artefact of the rarity of wild animals in graves, and one or two examples may come to light in a larger sample size. Alternatively, beliefs about different species and the appropriate uses to which they can be put could have varied widely, even where the relationship with humans appears to be similar.

Finally, “Imagined Animals” are those taxa which appear to carry the strongest cosmological associations. These have in common that they have notable attributes associated with status, war or violence. Birds of prey, wolves, boar and bears are all wild animals, most of which were dangerous to human life. Most of these were encountered rarely, if ever, in the landscape, although it is worth noting that white-tailed eagles may have scavenged around settlements as they did throughout the later medieval period (Yalden & Albarella 2009: 124-5). These predatory animals are the taxa which are referenced by the curated bone teeth and claw amulets in graves, and are also among the taxa depicted most often in art. Horses, associated with travel, hunting, war and status, are a particular case of a domesticated animal with a strong cosmological weight, which perhaps goes some way to explaining their frequency in graves. However, some taxa – such as some corvids, particularly ravens – may have been deliberately excluded from graves and mortuary rituals owing to their affordances and symbolism, as carrion birds.

Although this categorisation helps provide a framework for understanding the context of Anglo-Saxon animals in graves and in cosmology, there is a great deal more complexity to their meaning and symbolism in mortuary context.

Within the category of “lived animals”, horses have already been mentioned as a special case. There would have been differences, as well, between birds (chickens and geese) which were generally included in the grave whole, and larger domestic mammals (sheep, pigs and cattle) included as dismembered parts – both in terms of the economic implications of slaughter, and also the experiential aspects of the sacrifice. Even between sheep and pigs on the one hand, and cattle on the other, there appears to have been a status difference, with cattle a larger offering and therefore a more significant and higher-status sacrifice, more common in wealthier cemeteries. Equally, even different animals within the same species could carry different associations and therefore different roles in mortuary ritual, according to the contexts in which they were encountered. The wild boar has been specifically associated with ferocity and defence, but it is uncertain how or whether these associations transferred to domestic pigs. While in Linnaean taxonomy wild boar and pig are the same species, in the Anglo-Saxon world the two may have been viewed as strongly different creatures.

Within this broad structure of meaning, there is also scope for specific beliefs about animals and their roles in mortuary rites to be regional, local, and contingent on particular situations. Some practices are widespread, such as the frequent inclusion of horses in burial, and most types of amulets are also common across Britain, and it is possible to suggest that therefore the ideas and beliefs driving these practices are also to an extent held in common. Other practices, such as the inclusion of chickens and other meat portions with females at Castledyke South, may draw on general concepts of what is appropriate but are defined much more locally. In general, it can be argued that while there is a general tendency towards inclusion of meat from domestic animals in graves, there is substantial variation in what this sacrifice is and who it can be included with. Finally, general practices could be inverted or transformed in particular situations, such as the inclusion of a goose (rather than a chicken) with a man (rather than a woman) at Castledyke South, or the inclusion of a complete cow with a woman at Oakington. These odd graves stand as peculiar outliers, and as reminders that mortuary practices were dynamic and could be created in response to specific circumstances. The meaning of animals in graves is found not simply in beliefs about the afterlife, but in the interplay of economic, personal and cosmological values.

7.4 Pagan Animals, Changing Worldviews

As discussed in Chapter 2, perceptions of animals in “pagan” Anglo-Saxon England are increasingly considered to have differed markedly from modern, dualistic and functional perceptions. Paganism was “animistic” in the sense that the boundary between humans and animals may have been more fluid than solid, with amulets and images used to convey desirable attributes of certain animals onto humans or objects, and perhaps certain humans able to go beyond this and “transform” into animals. Certain animals may have been considered as mediators between worlds, and omens or predictions could be read in the movement of birds or the breath of horses. The lack of a strong hunting culture in the 5th-7th centuries AD may have reflected an enduring reverence for the wild (Sykes 2011). The difficulty of reconstructing past belief and perceptions for a time which is almost entirely ahistorical means that these attitudes have been deduced from hints and scraps – art, analogies with Scandinavian evidence, references by later Christian writers – which bear only a partial witness to the complexity of pagan belief in the 5th-7th centuries. In particular, “paganism” does not represent a single orthodox religion with a single central set of beliefs, as Christianity does, instead encompassing a variety of overlapping, local beliefs (Carver 2010), which perhaps have more in common with folklore than religion. Within this, there is substantial scope for beliefs about animals and their place in mortuary ritual and sacrifice to be similarly heterodox and localised.

The role of belief in creating the grave remains difficult to define, as it has been emphasised throughout that this is only part of a matrix of factors which influence which animals are used, and indeed whether they are included at all; and other evidence for animistic beliefs remains sparse. However, it is entirely possible that some of the variation noted in graves can be attributed to variation in belief. Williams has suggested that the Anglo-Saxon cremation rite is fundamentally different from contemporary inhumation burial in terms of underlying beliefs, partly due to the higher frequency of inclusion of animals in cremations (Williams 2001). Cross-cultural study of non-state societies has shown that body treatment (including the choice between cremation and inhumation) is determined most often by beliefs about the afterlife and the social standing of the deceased (Carr 1995: 161), indicating that eschatological conceptions may well have formed a fundamental background to the choice of rite. However, even within these rites, specific beliefs may have varied. Animals were not visibly included in the majority of Anglo-Saxon graves – both cremation and inhumation – and the absence of animals from most graves is difficult to attribute either status or identity. At Spong Hill, less than a tenth of cremations (215 out of 2323) included horses as part of the pyre ritual. While wealth and identity have been argued to play a part in this, it is also arguable that the beliefs which required or preferred the sacrifice of a horse as part of mortuary ritual were not shared throughout the community.

For inhumation burial, the inclusion of animals was an even more restricted rite, important in only a small percentage of burials. At Castledyke South, Lee (2007) has suggested that the burials including chickens all occur within close proximity to each other in the cemetery, perhaps indicating that the burials are of members of a family group or sub-community within the larger burial community. At Lakenheath, it is arguable that the young men with meat portions are in fact not typical of the community beliefs, but instead represent a sub-set of the community to which the inclusion of animal offerings in burials mattered. If this reflects the situation in cremation cemeteries, it is possible that some of the variation at large cemeteries such as Spong Hill can be attributed to multiple and overlapping family or small community traditions of what is appropriate and right in terms of mortuary ritual.

This study has focused on the east of England, partly for the reason that this was one of the areas most heavily influenced by new ideas and people arriving from the Continent in the 5th century AD. These ideas do not directly reflect beliefs and practices from the homelands from which they migrated – instead, migrant communities may have drawn on ancestral traditions to create beliefs and traditions relevant to a new situation. However, the migrants of the 5th century did not arrive in an empty and unoccupied land. The influence of Romano-British Christianity and even Romano-British paganism on 5th-7th century beliefs and burial traditions is extremely hard to ascertain, particularly in the east, where Romano-British traditions survived less well than further west, where Anglo-Saxon influence was slower to penetrate (Dark 2000). The question of how well pre-existing traditions and beliefs survived and may have been incorporated into beliefs about animals and mortuary traditions is highly important for our perceptions of this period, and may be easiest to answer in the south-west of Britain, where late Roman influence and wealth was strongest and a post-Roman culture is discernible for longer (Dark 2000). At Butler's Field cemetery in Gloucestershire (Boyle et al. 1998), the animal remains included with inhumation burials suggest two different traditions. Several amulets – beaver, canid and pig teeth – are included with female and juvenile burials, suggesting continuity in this tradition and in some beliefs with the east of the country. However, the burial of a man with rook and with bell may reference older Roman traditions (Section 6.3). The use of animal remains in mortuary practices in the west of England is a relatively unexplored area, but is likely to provide an important counter-point to the more heavily Anglo-Saxon east. The 5th century is traditionally considered as a boundary in terms of periods – an end-point for Roman Britain, and a start date for early medieval England. However, particularly in the west, it is arguable that the 4th – 7th centuries instead represent a continuation of late Roman and post-Roman practices. It is important to look across the boundary of the 5th century to see which traditions may have survived, and how this reflects the situation in the east of England, where Romano-British influence may be prevalent, but is much less evident.

In the 7th century, the reintroduction of Christianity meant the adoption, at least on an elite level, of a religion with a central core of orthodox beliefs in which animals played no part. In iconography, Christianity offered a new range of animal symbolism (e.g. the lamb as a symbol for Jesus; the winged lion, the eagle and the bull as symbols for three of the four evangelists) and different exotic or imaginary taxa, such as lions and unicorns, were imported into the artistic repertoire (Webster 2012). While Christianity disrupted and demonised pre-existing practices involving animals which were incompatible with Christian belief or presented a challenge to its power, the heterodox and localised nature of pagan belief meant some local beliefs could be readily absorbed into a Christian context (Jolly 1996), or persisted alongside the newer beliefs. The instinct that animals were important can be argued to have been an important and recurrent feature of unorthodox belief throughout the medieval period and into the modern era. Animals were used as foundation deposits and charms against bad fortune; their movements can predict the future, as in the well-known magpie rhyme or the bad luck of a black cat crossing your path; they occur in stories, such as the transformations of humans into animals, or of haunting by an ill-treated animal after its death, such as the ghostly horse of the 19th century song Widecome Fair. While these cannot be directly traced back to Anglo-Saxon pagan belief, they echo some of its suggested concerns – mutable boundaries between humans and animals, the use of animals in divination, sacrifice to ensure the safety of a structure or the safe passage of the dead to the next life. The consequence of living closely with non-human agents, as is the case in any period excepting modern urban times, is perhaps that animals cannot play an entirely neutral role in either worldview or religion, but demand explanation and point towards forces beyond human control, and will therefore always possess an undertow of cosmological or symbolic significance.

Coda: Country Life

In August 2015, a protest was staged by farmers in Stafford over the price of milk, which had in supermarkets dropped below the cost of production due to a reduction in global demand. As part of the protest, the farmers brought two cows into Asda in Stafford, which “created mess as they walked” through the store (BBC news report, http://www.bbc.co.uk/news/uk-england-stoke-staffordshire-33840815). The stunt was reported in most major British online news outlets. The incongruity of a cow standing in the milk aisle of a supermarket speaks volumes about the modern day disconnect between the food and other animal products we consume, and our experience of the living animal. For the modern urban dweller, direct experience of a cow – what a cow “means” – is limited and can be summarised as cowpats, flies, “Beware of the bull” signs, and slightly unnerving encounters on country walks or school fieldtrips. Cows, and other farmyard animals, are part of an idea of a timeless, unchanging “nature” which developed as part of the Romantic movement in the eighteenth century. Except within farming communities, the experience of a cow as a real working animal has broadly been lost. This disconnect is both a result of and a catalyst for global industrialised farming, which has largely developed in the years following the Second World War. The overriding priority for modern consumers is value for money and choice, thereby creating a demand for cheap food available year-round. At the same time, production systems are increasingly hidden from consumer view. Some of the costs of this have been ethically dubious practices such as battery farming, “finishing” (feeding up for slaughter) and inhumane slaughter, as well as farming monocultures, decreasing diversity of species, poor long-term land management, and increasingly poor returns for farmers.

For subsistence farming societies in the Anglo-Saxon period, this would have been an entirely alien way of thinking. Secondary and primary products from domestic animals were the mainstay of existence, and the needs of domestic animals dictated much of daily and seasonal practice. The absence of intensely urban environments and regular interaction with a local landscape meant animals were regularly encountered which would today be considered as “wild” – deer and deer antler in the woods, foxes and badgers in the fields, beavers and otters in the rivers, eagles in the skies. The importance of horses in enabling travel and defence would have been paramount. The slaughter and butchery of any animal for meat would have been very evident within the community, and a source of mixed emotions – anticipation of meat, and shock at the violent death of a known animal with its own agency and history.

The eighth century AD sees the beginning of many changes in Anglo-Saxon England, including resumption of urban living, increasing specialisation in food production, the end of communities which viewed themselves as a diaspora, and establishment of Christianity as both an elite power and a cosmology. In its forbidding of consumption of horsemeat (Poole 2013a) and disapproval of sacrificing oxen to other powers than God, Christian clerics appear to have made unorthodox a tradition of animal sacrifice with antecedents which went back millennia. In the 13th century, Aquinas was able to state that “the life of animals and plants is preserved not for themselves but for man. Hence… by a most just ordinance of the Creator, both their life and death are subject for our use.” (*Summa Theologica*). It is arguable that the roots of this statement lie somewhere in the eighth century, in the interaction of changing economies and cosmologies which acted to objectify animals and separate some portions of the population from care of the animals which constituted their food and clothes. By the time of the Norman Conquest, attitudes to food, hunting, and the place of animals in cosmology had changed fundamentally and irrevocably.

Zooarchaeology, developed in a modern western Aquinas-influenced milieu (O’Connor 2013), has tended to view animals as objects and commodities. However, recent theoretical developments within the subject have seen a florescence in recognition of the complexities of past and present animal-human relationships, with social zooarchaeology developing as a recognised field (Russell 2012; Sykes 2014) and an increasing interest in the animal as agent (e.g. Armstrong-Oma 2010; Orton 2010; O’Connor 2018). It is possible now to recognise a sheep in the Anglo-Saxon period not simply as sheep or mutton, but as a living participant in a nexus of skills, economic value, relationships and belief, and it is from its place within this nexus that its meaning in mortuary ritual derives. The factors which disrupted mortuary sacrifice are also those which constituted a significant step on the road to where we are today: cow, supermarket, milk protest, global demand.

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Appendices

Appendix 1: Cremation Data Collection Methodology

Three cremation cemeteries, comprising 363 cremations in total, were analysed as part of the project. Cremations from Illington, Norfolk, and Snape, Suffolk, had been subject to previous analysis, while cremations from Field Dalling, Norfolk, had never previously been assessed. The cremated material from Illington was analysed in conjunction with a human remains specialist (Michelle Williams-Ward), while the cremations from Field Dalling were assessed only for animal bone by the author. Cremated bone from Snape was previously assessed by Mays & Steele (2001), so was only reassessed for animal bone by the author. Analysis of material from Snape was conducted at the offices of Suffolk County Council Archaeological Service; all other sites archives were held by Norwich Castle Museum and analysis was conducted there or at the University of Bradford. All animal bone was identified to the lowest taxonomic level possible, with the aid of reference collections at the University of Bradford and the University of York.

The cremations from Illington and Field Dalling were analysed following the guidance published by McKinley (2004a). The cremated bone was sieved into 10mm, 5mm and 2mm fractions, and weights recorded for each fraction, to the nearest 0.1g. Any animal bone was bagged separately to the rest of the assemblage, and the overall weight of animal bone from each cremation was recorded.

The separated animal bone was then identified and recorded. For fragments which could be identified to taxon, the following information was recorded:

- Taxon
- Element
- Quantity (number of fragments)
- Side (left / right)

- Age data. This was almost exclusively epiphyseal fusion data (proximal / distal fused / unfused), but also included any neonate or foetal bones identified from bone size and texture (“neonate”).
- Colouration. The colour of burnt bone, ranging from reddish through to white, gives an approximate indication of the temperature of combustion (McKinley 2004a), and may help to indicate the placement of the animal bone on the pyre.
- Other taphonomy. This includes any evidence of butchery or gnawing, and was recorded as notes.
- Comments. Any further notable information, including any observed pathology, was recorded as notes in this section.

Any fragments which could not be identified either to taxon or to size category were recorded as “unidentified”. Quantity of unidentified fragments was recorded, but no other fields. Unburnt bone found within cremation contexts was recorded in the same way as cremated bone, and was specifically noted as “unburnt” in the “colouration” category. Unburnt bone found in non-cremation contexts, as was the case at Field Dalling, was recorded in a separate spreadsheet, following the methods used for unburnt bone from inhumation cemeteries (Chapter 3). Identified bone was then grouped into ABGs within individual cremations, and the composite information entered into the spreadsheet used for secondary data.

Appendix 2: Illington Site Report

The Site

Illington lies near the Norfolk/Suffolk border, 11km northeast of Thetford (Davison et al. 1993). The cemetery was excavated rapidly in nine days by Group Captain G.M. Knocker in 1949 in response to disturbance by deep ploughing, but not published until 1993 (Davison et al. 1993). The cemetery is predominantly cremation, comprising 196 urned cremations, 3 inhumations, and 3 unurned cremations. The full extent of the cemetery is not known, and it is likely more remains unexcavated. It is dated to the 6th century on the basis of brooch typology, although this dating is relatively tentative and no start or end dates are firmly delineated.

The cremated human bone was initially assessed by Dr Calvin Wells in 1956, and cremated animal bone by Miss J.E. King of the British Museum (Natural History). Not all excavated cremation urns contained bone: 104 bone groups were assessed by Calvin Wells, and 112 were assessed in the current analysis. It became clear during analysis that the animal bone identified in 1956 had been separated from the remainder of the cremation for identification, and has subsequently been lost. The identifications from the 1956 report are therefore included in the current analysis, although they could not be verified thanks to the lack of the physical bone. A comparison of the results from the current analysis and the 1956 report is included earlier in this thesis (Section 3.4.1). The human bone was reassessed concurrently by Michelle Williams-Ward.

Methodology

The methods of assessment for Illington are based on the standard procedures developed by McKinley (2004a) and are detailed in Appendix 1. Animal bone was identified using reference collections at the University of Bradford and the University of York and reference guides (Schmid 1972; Pales & Lambert 1971) and the author is grateful to Terry O'Connor and Julie

Bond for assistance with problematic identifications. Fusion ages are based on Silver (1969).

Condition of Samples

The cremated bone from Illington was generally well-fired, with colouration mostly buff (indicating mostly complete oxidation of bone), but with white (full oxidation), black and reddish (poorer oxidation) colours also recorded. Fragmentation was reasonably low, with the majority of the cremation in the 10mm fraction (69% of average weight) and very little in the 2mm fraction (2.5% of weight). The mean weight of cremations was 314.26g. While this is much less than the average weight of cremated remains from an adult (2500-3000g; McKinley 1993), it is comparable to other Anglo-Saxon cemeteries. While lower than the mean weight at Spong Hill (514g), it is higher than more severely plough-damaged cemeteries of Snape (222g), Springfield Lyons (176g) and Mucking (147g). The largest cremation at Illington weighed 1184g, with only five more from the cemetery weighing above a kilogram, again in contrast to Spong Hill, where the largest cremation weighed over 5kg, and several were more than 3kg. Approximately one-third of cremations from Illington weighed less than 100g. The relatively small weights are likely to be a result of ploughing or other disturbance, and many of the urns are recorded as fragmentary in the catalogue (Davison et al. 1993). Interestingly, animal bone is more frequent in cremations of higher weights, with 5 out of 6 (83%) of the 1kg+ cremations containing animal bone, compared to 6 out of 36 (17%) of the <100g cremations (Table 1). Whilst this is a relatively intuitive pattern – humans with animals weigh heavier than just humans; conversely, the smaller the sample taken, the more it excludes – if the low weights are due to taphonomic or disturbance factors, it is likely to have affected at least the prevalence of the animal bone in this cemetery.

15 identified animal bone fragments from cremations at Illington showed signs of incomplete cremation (burnt black or reddish). Of these, two-thirds were from large mammals, and longbone fragments were the most common element to have been poorly burnt. Large mammal longbones are frequently

under-represented in cremations (Bond 1994, 1996; Section 5.3), and one observation from experimental cremations is that incompletely cremated bones (coloured black or brown) are more difficult to collect, simply because their colour makes them harder to spot against the background pyre debris (Worley 2010). While far from definitive, the evidence from Illington does appear to support the hypothesis that large mammal longbones may have been more likely to be poorly cremated, and potentially therefore missed in collection, than those from smaller-sized taxa.

Weight	Number	With AB	% with AB
1kg+	6	5	83.3
500g - 1kg	20	11	55.0
100g - 500g	48	16	33.3
<100g	36	6	16.7

Table A1: Number and proportion of cremations containing animal bone against weight of cremated bone at Illington, Norfolk.

Results

Including data from the 1956 assessment, animal remains were recovered from 39 cremations at Illington, including 7 multiple animal cremations, out of a total of 112 assessed cremations. This gives an overall prevalence of 35% of cremations with animal inclusions. This is a lower prevalence than at the nearby cemetery of Spong Hill (46.4%) (Bond 1994), but higher than the more disturbed cemeteries of Field Dalling, Norfolk (22%) (see Appendix 2, below) and Snape, Suffolk (23%) (Mays 2001). 3.5% of cremations overall contained multiple animal inclusions, similar to Spong Hill (8.4%) and Field Dalling (5.6%). No “animal accessory” burials (McKinley 1994) were identified from the site.

Animals

Table 1 shows the overall frequency of animals within cremations at Illington. As is typical in Anglo-Saxon cremation cemeteries, horse is the most common single taxon, with sheep and unidentified medium mammal second-most common. Cattle are unusually common, representing the third most frequent inclusion ahead of pigs, although it probable that this can be attributed to a tendency in the 1956 assessment to identify elements such as ribs, which are only identified to “large mammal” in the current assessment, to “cow” or “ox”. In some cases, identification of other elements from the cremation mean these are more likely to be horse, but in the absence of the physical archive these cannot be corrected.

Taxon	**Multiple**	**Single**	**Total**
horse	4	7	11
cow	3	3	6
sheep	2	8	10
pig	1	2	2
deer	1		1
roe deer		1	1
dog		1	1
bird		1	1
Galliforme		1	1
small wild goose	1		1
large mammal	1	5	6
medium mammal	3	3	6

Table A2: Frequency of taxa from cremations at Illington, Norfolk. “Multiple” indicates that the taxon is included in a cremation with other animals; “Single” indicates inclusion in a cremation without other animals.

The assemblage is dominated by the major domestic animals, but several less common taxa – including dog and probable chicken – have been identified. Wild taxa are represented in three cremations, with two examples of deer antler and one small wild goose. Only one of the examples of deer antler (Crem 1) could be identified to species, and this derived from a roe deer. Hollowing-out of the tines and loss of internal bone mineral indicates that the antler was probably shed naturally rather than collected from a killed animal (Terry O’Connor pers. comm., Oct. 2015).

Little age data is available from the cremated animal remains. None of the horse remains were clearly immature, and one cremation containing identified horse elements also contained large mammal vertebrae, indicating that the horse was fully adult. Of 10 identified sheep, four could be aged from fusion of one or more elements. All are below three years, and the one sheep which could be aged most precisely was between 18 months and three years of age, a typical age for an animal slaughtered for meat. Both examples of pig were ageable, and the age data shows more diversity, with one animal (C133) clearly a neonatal suckling pig, and the other a pig less than 2.5 years of age, but which had attained almost adult size (C49). Again, both of these are consistent with animals slaughtered for meat, with other examples of suckling pig having been found from cremations at Spong Hill (Bond 1994).

Discussion and illustration of the element representation for the major taxa found at Illington, including the categories of medium mammal and large mammal, can be found in Section 3.4.1. As is typical in cremated material, the elements of large mammal which could be identified to species (horse or cow) are predominantly elements from the head and feet, with most vertebral and longbone fragments identified only as far as large mammal (Bond 1996). The majority of longbones from large mammals were sufficiently heavily-fragmented that they could not be identified to element, and are instead categorised only as shaft fragments. However, their frequent presence in cremations with identified horse elements can be taken as an indication that horses were included either complete, or at minimum as more than simply head-and-foot burials (see Section 3.4.1; Bond 1994).

For medium-sized mammals (sheep/goat, pigs and medium mammal), the element representation is substantially more even across the body, with the major longbones (humerus, radius, femur and tibia) among the most common elements identified. Again, this is a general feature of cremated material and thought to relate to body size, with longbones from medium-sized mammals either cremating more completely than larger mammals, or fragmenting less and into more recognisable pieces (see Section 5.3). Conversely, smaller bones such as carpals and minor tarsals are under-represented, probably because these are easily missed in collection from the pyre site.

The difficulties of incomplete collection from pyre sites and the effects of cremation on the identifiability of various elements make it hard in most cases to say how much of an animal is represented in any one cremation (Section 5.3). Evidence in the form of butchery marks from other cremation sites (Sancton (Bond 1993), Spong Hill (Bond 1994), Field Dalling (below, Appendix 3)) indicates that cattle, sheep, pigs, roe deer and horses may have been dismembered before being committed to the pyre, and at least in the case of the major domestic mammals, it is considered likely that some of the carcass was reserved for consumption by the living (see Section 5.3). Table 3 (below) shows the body areas of each taxon identified in each particular cremation from Illington. In some cremations, only a single, defined portion of the animal appears to be represented (e.g. C273 – one sheep hindleg, consisting of femur and tibia). In others, it is clearly the case that more of the animal is represented (e.g. C5 – sheep, with elements from cranium, foreleg, hindleg and vertebrae). However, with the taphonomic problems mentioned above, it is difficult to draw too many conclusions from this data.

Context	Age	horse	cow	sheep	pig	deer	dog	chicken	SWG	bird	large mammal	medium mammal
41	adult					antler						foreleg
136	adult			ribs					wing, leg			
166	adult	foot	foot									
28	immature	head, hindleg, foot	foreleg									shaft
6	indet			foreleg							tooth	
132	indet	head, hindleg, foot			hindleg							
156	indet	hindleg, foot	ribs									vert
102	adult; immature										tooth	
8	adult	foot										
44	adult			foreleg, hindleg, vert								
68	adult	hindleg, vert										
71	adult		rib									
90	adult	hindleg										

133	adult				foreleg, hindleg: neonate							
161	adult	foreleg										
167	adult	whole										
168	adult		foreleg									
227	adult											ribs
279	adult			foot								
23	immature											foreleg
9	indet											foreleg, hindleg
48	indet			foot								
81	indet							wing				
129	indet	tooth, foot										
189	indet										tooth	
228	indet										head	
273	indet			hindleg								
276	indet										shaft	
278	indet									leg		
8A	indet										tooth	
9B	indet			head, vert, hindleg								
5	older child			head, foreleg, hindleg, foot								
33	older child		foot									

49	sub-adult				hindleg, rib							
69	sub-adult			unk								
226	sub-adult						foot					
1	young adult					antler						
43	young adult			hindleg, foot								
157A	unk	foot										

Table A3: Animals in cremations from Illington, Norfolk, incl. body parts.

Animals and Humans

Table 3 presents a full list of the cremations containing animals from Illington, and what animals and portions of animals they contained. The majority of cremations containing animals are with adult or subadult / adolescent humans, with only two examples with individuals of less than 12 years old. None of the cremations containing animal remains could be sexed with any confidence (Williams-Ward 2017).

Of the seven multiple animal cremations, four contain horse with one or more domestic mammals (cattle, sheep or pig). Two (C28 & C156) have more than one apparent domestic animal included with the horse, both including both cattle and unidentified medium mammal – cremation 28 is also notable as it occurs with an immature individual. Of the remaining three, cremation 6 follows the pattern of large mammal + medium mammal, although the large mammal in this instance is represented by a single unidentified tooth; and the remaining two contain a medium mammal portion (sheep / medium mammal) with a wild species (small wild goose and deer antler). The majority of the multiple animal cremations were with adult individuals (3 out of 4) where age could be attributed, with only cremation 28 (mentioned above) included with an immature individual.

Within the single animal cremations, the inclusion of horses is restricted to adult cremations, reflecting a general trend in Anglo-Saxon cremation cemeteries for horses to be included only with individuals beyond the age of puberty (Bond & Worley 2006; see Section 5.2). Only seven cremations of subadults or children contained animals – one multiple animal cremation (C28, discussed above) and six containing single animals. The animals included with sub-adult individuals, where identified, are predominantly sheep, pig and cattle, excepting C226 (sub-adult) which contained two dog metapodials. While most multiple animal cremations were included with adults, cremations of younger individuals could also include a substantial quantity of animal remains, as indicated by C5 (older child), which contained elements from the head, foreleg, hindleg and vertebrae of a sheep, either indicating the inclusion of a complete animal or at the least several substantial portions of the carcass. Excepting the dog, all of the more unusual inclusions (antler, small wild goose, neonate pig) were included in adult burials, a pattern which is typical of Anglo-Saxon cremation cemeteries across eastern England (Section 5.5).

Conclusions

In character and essence, the animal inclusions at Illington appear typical of Anglo-Saxon cremation cemeteries in eastern England, with horses and sheep common, wild mammals and birds distinctly uncommon, and distinctions in the type and character of offerings afforded to younger individuals and those afforded with adults. Unlike other cremation cemeteries to be assessed recently from the area – Field Dalling (Appendix 3); Tranmer House (Bond & Mustchin 2015) and Lakenheath (Bond forthcoming) – Illington does not show any unique features or trends, and instead the cemetery appears very similar to the large “folk” cemeteries of Spong Hill (Bond 1994) and Sancton (Bond 1993), albeit smaller and less diverse, with a lower proportion of graves with offerings. Geographically, Illington is located within 25 miles of Spong Hill, and is similarly a predominantly cremation cemetery with no particular high-status associations, although Spong Hill is more than ten times larger than Illington in terms of excavated cremations. From this perspective it is perhaps unsurprising that the use of animals at both cemeteries differs primarily in scale. However, there appears to have been a focus on the inclusion of single portions of sheep and medium mammal ribs at Spong Hill, especially with infant and juvenile cremations, which is not mirrored at Illington (Section 5.3) indicating the possibility of local differences, even between relatively similar cemeteries.

Perhaps most importantly, the reassessment of the Illington assemblage has indicated the extent to which older analyses of cremated bone may be inaccurate, and the particular traits of these analyses, such as underidentification of large mammals and birds, and a focus towards easily-identified longbone and rib elements from medium-sized mammals (Section

3). This incomplete identification has the effect of skewing the overall taxonomic representation from the cemetery site, with horses generally under-represented, and sheep the most common taxon – a pattern which is not otherwise present in any substantial cremation cemetery from eastern England. Another site which appears to follow this pattern is the cemetery of Millgate, Nottinghamshire (Kinsley 1989), and thus reassessment of cremated material, particularly focused on the identification of any animal material remaining within the human fraction, should be considered a priority for this site.

Appendix 3: Field Dalling Site Report

The Site

Field Dalling is situated in north Norfolk, and is the most northerly of the Norfolk cremation sites discussed in this report. The site lies 500m to the north of the present village of Saxlingham. In 1975, 60 cremations were discovered when the field in which the cemetery was located was deep-ploughed. The location of 30 of these cremations was plotted. A subsequent three-day trial excavation was undertaken by staff from the Norfolk Archaeological Unit, Norwich Castle Museum, Norfolk Archaeological Rescue Group and Norfolk Research Committee, in order to ascertain the extent to which the cemetery had been affected by ploughing. A further 47 cremations were found by this excavation, of which twenty were in situ and the rest disturbed by plough damage. 2 inhumation burials were also excavated. Later metal detecting campaigns were carried out at the site, but no further excavation, as no further damage from ploughing was anticipated. The material archive is held by Norwich Castle Museum. The Field Dalling cemetery is currently unpublished, and is being written up by K. Penn (pers. comm., Sept 2015).

Cremated bone was recorded from 81 contexts. In addition, 7 contexts contained unburnt animal bone, which was recorded on the same protocol as adopted for the Caister-by-Yarmouth bone (Section 3.3.2). The cremations were assessed using the standard assessment protocol by the author (Appendix 1, above), but the human remains have not been assessed.

Condition of assemblage

Cremated bone was present from both the cremations disturbed initially by the plough (36 cremations; nos. 1-89), and the subsequent excavations (45 cremations; nos. 90-168). Most of the cremations were recovered from Trench A.

Animal bone was recorded in 18 of the 81 cremation deposits. Only two of these are from deposits with a sequence number lower than 90. When taken as a whole, the percentage of cremations containing animal bone is low at Field Dalling compared to the other cremation sites in the area. However, as noted at Illington, the overall weight of the cremations correlates with the prevalence of animal bone, indicating that plough damage can adversely affect prevalence rates. The mean weight of cremations from Field Dalling is low (392g, compared to 514g at Spong Hill). However, the site can also be divided into cremations numbered up to 90, and cremations numbered 90 and above. The mean weight for cremations numbered up to 90 is 31g, indicating a very high level of plough disturbance. The prevalence of animal bone in these deposits is similarly low (6%). For the cremations numbered 90 and above, the mean weight is 689g, heavier than non-plough damaged cremations from Spong Hill. Animal bone is present in 35% of cremations from this section of the site. This is lower than Spong Hill and the large Lincolnshire cremation sites of Elsham and Cleatham, but is comparable to Illington. It is possible that this is a genuine pattern, with animal bone less common in smaller cremation cemeteries than in larger. On the other hand, it is also possible that the lack of concurrent analysis of the human bone fraction and relative inexperience of the analyst has led to some animal bone being missed.

The cremated bone was largely well-fired, with the colouration predominantly buff, white or grey. One cremation (144) was especially well-fired, with the majority of the bone almost completely calcined. 18 identified fragments from seven cremations were recorded as having at least a partial colour of either black or brown, and of these, the majority (11) were from large mammals. Within the cremations, on average the majority of the bone weight was in the 10mm fraction (53%) and in the 5mm fraction (33%), indicating a reasonable level of preservation and identifiability where the cremations are not plough-damaged. In the most plough-damaged cremations (numbers 1-90), the bone weight is divided more equally between the 5mm fraction (42%) and the 10mm fraction (40%), reflecting a higher level of disturbance and fragmentation.

Results

Table 4 shows taxa present as cremated deposits identified from each of the 17 cremations within which they were present. As with other sites in this thesis, elements reported only to size category (medium / large mammal) have been included in with specific taxa wherever possible (eg. if a cremation included medium mammal and positively-identified sheep only, the medium mammal bones are assumed to be sheep, although they are recorded separately in the data). Horse is the most commonly identified species, present in four cremations. However, medium-sized mammals (sheep, pig, roe deer and “medium mammal”) appear to be substantially more common overall than larger taxa (horse, cow, and “large mammal”). The species represented are relatively diverse for a small assemblage, with six separate species identified, although pig is only represented by a single lightly-burnt phalanx in cremation 139, and may be residual. Horses are the only animal represented which can be considered “non-food”, while roe deer is the only wild taxon. The assemblage can be considered to be restricted to the two most common categories of inclusion – horses and food deposits – with none of the more unusual elements, such as dogs, amulets, or wild birds or predators represented.

Four cremations of the seventeen contain multiple animals. Three of these contain horses and one or more “food” deposits – one with horse + sheep; one with horse + medium mammal; and one with horse + cow + medium mammal. The fourth cremation, 139, contains pig and chicken, but as mentioned above it is possible that this pig phalanx is in fact residual from another pyre site or different source.

Context	horse	cow	sheep	pig	roe deer	bird	large mammal	medium mammal
128		foot	unburnt				unburnt	
129	whole		foreleg R					
139				foot		leg		
155	head, foot	foreleg L						vert, ribs
162							unburnt	ribs, foreleg
168	whole							rib
9								ribs
31								foreleg
92					?foreleg L			
115	foreleg, hindleg, foot R							
135			unburnt					
146			hindleg R					
151								unburnt
157			foreleg L					
158			unburnt					
161					foreleg, hindleg, foot L + R			
164								ribs
167								ribs

Table A4: Animals included in cremations at Field Dalling, Norfolk.

In terms of element representation, Field Dalling shows similar patterns of presence and identifiability to those noted generally from cremation cemeteries. Horse is predominantly represented by foot and lower leg elements, and elements identified to “large mammal” in the same cremations include the “missing” elements of upper limb bones (femur and humerus), ribs, vertebrae, and cranial fragments. It is a fairly safe conclusion that, as at all other cremation sites in the region, horses were incorporated into cremations as complete animals. Cattle is positively identified from very few fragments – 2 fragments of ulna in cremation 155 and one carpal in cremation 128 – and in neither of these cremations can any fragments of large mammal be safely assumed to be cow. It is therefore difficult, considering the paucity of evidence, to comment on how cattle were represented on the pyre.

Sheep, roe deer and other medium mammals appear, by contrast, to have be included as discrete single portions, with typically only a few ribs and vertebrae, or elements from a single hindleg or foreleg from one side of the animal, represented in the cremation. The only two examples where more has been included are cremation 162, where one rib and one fragment of humerus shaft indicate the inclusion either of a substantial portion of a single animal (ie. a forequarter), or two smaller portions (ribs & foreleg). Similarly, cremation 161 is particularly interesting, as it yielded two fragments of radius and two carpals, all left hand side, and one right-side distal tibia, all identified as roe deer. While it is impossible to tell whether this was consigned to the flames as a complete carcass or as several joints, it is clear from a substantial chop-mark to the distal tibia that the carcass was at least partially dismembered prior to burning. The deposit is particularly unusually in that it is the first example of post-cranial elements from deer to be identified from an Anglo-Saxon cremation. A further possible element of roe deer – a distal radius – was identified from cremation 92, and this also showed evidence of butchery in the form of knife marks. The sole element of bird identified was a single galliforme femur shaft, with insufficient features surviving to identify confidently to species.

In general, the animals represented as offerings in the cremations at Field Dalling appear very similar to those offered in other cemeteries within Norfolk, particularly Spong Hill (Bond 1994) and Illington (Appendix 2, see above). The number of cremations represented is less than at either of these cemeteries, and the proportion with animal bone is also lower, which can be attributed to the severe plough damage which has affected Field Dalling. Unsurprisingly, the species diversity is also therefore less at Field Dalling, although roe deer is a unique species which has only ever been found as antler at the other sites. The proportion of multiple animal burials as a percentage of total animal burials is higher at Field Dalling than at either Illington or Spong Hill (23% as compared to 17% and 20%, respectively), although the numbers are comparable and the variation is probably due to the small numbers at Field Dalling, rather than any evidence of wealth. In location, Field Dalling lies towards the north of present-day Norfolk, some distance from both Spong Hill and Illington. It is clear that rites involving animals at this site are very much still part of the tradition evinced by the other sites, but the inclusion of roe deer is potentially evidence of a much more localised practice.

Unburnt bone

In addition to the cremated animal bone, a small assemblage of unburnt bone was recovered. This mostly comprises 156 fragments from 6 non-cremation contexts, and a further 10 fragments incorporated within 8 separate cremations. The assemblage is comprised largely of unidentified material (63% by fragment count), due in part to heavy fragmentation in context 148. The small identified fraction (58 fragments) itself is dominated by elements identified as “large mammal” or “medium mammal”, with only 21 fragments (13% of assemblage) identified to species-level. Despite the low levels of identification, the condition of the assemblage was mostly described as “reasonable”, with only a small proportion of material recorded as “poor”, although a number of refits and/or recent breaks indicate some fragility to the bone, as well as probably rough handling. Evidence of taphonomy was limited, but butchery marks were recorded on three elements, including both chop and knife marks, suggesting dismemberment and probable consumption. Dog gnawing was recorded on three elements, and fine-line fracturing on the surface of a medium mammal tibia shaft, which may indicate some surface exposure for at least a part of the assemblage prior to burial.

The assemblage is dominated by medium mammal bones, with the vast majority of the identified fraction identified to medium mammal, pig or sheep (45 frags, 77%), with the remainder identified as “large mammal” (12 fragments) (Table 5). No elements of cow or horse were identified. Sheep is the most common single taxon, with two fragments of pig also identified. A single human vertebra was also present. The restricted species diversity is at least partially a result of the very small size of the identified assemblage, and high levels of fragmentation can also lead to medium and smaller sized species being more readily identified than larger taxa.

Taxon	**Quantity**
sheep	18
pig	2
large mammal	12
medium mammal	25
unid	98
TOTAL	156

Table A5: Taxon representation within unburnt bone from Field Dalling, Norfolk.

There is little apparent difference between material recovered from wholly unburnt contexts and that recovered from cremations. The fragments recovered from cremations have been identified to sheep (3 frags), medium mammal (2 frags) and large mammal (2 frags), with the remainder unidentified (3 frags). In terms of element representation, there does not appear to be a focus on any particular body area, with cranial, vertebral and longbone fragments all represented. None of the unburnt bone qualifies as an ABG. In the absence of a clearer taphonomy for the site, it can only be assumed that these inclusions are intrusive into the cremations, rather than deliberate.

The taphonomic history of unburnt animal bone in cemeteries, both cremation and inhumation, is frequently complex, and its derivation is typically difficult to ascertain. In the case of Field Dalling, the character of the assemblage, and particularly the evidence of carnivore gnawing, suggests a long taphonomic history and potentially a domestic source to the assemblage. Without further contextual information, and, particularly, dating, there is little further than can productively be said regarding this material.

Comments and Further Work

The cremated animal bone from Field Dalling fits into the general regional tradition seen across Norfolk and Eastern England, with substantial similarities to nearby sites such as Spong Hill (Bond 1994) and Illington (Appendix 2, see above). A lower prevalence and more restricted species diversity seen at Field Dalling can probably be attributed to the deleterious effect of ploughing on the assemblage. While in many ways representing “more of the same”, Field Dalling is nevertheless an important site, representing the third largest assemblage of cremated bone with a full zooarchaeological assessment in the entire eastern England area (after Spong Hill and Illington). The presence of post-cranial roe deer bone is also a feature currently unique to this site.

The lack of an osteological assessment on the human fraction of the cremations limits what can be said about the animal bone, and such an assessment is a priority in any future work. A full assessment of the human material may also yield further animal bone which was not recognised in the initial assessment. Analysis and contextualisation of other aspects of the material assemblage from the site, which is ongoing, will also influence the final interpretation of the animal bone, and Field Dalling’s position within the broader Anglo-Saxon cemetery tradition. The retention of cremated bone by the original excavators, a substantial quantity of it relatively undamaged by ploughing, makes this site rare in Norfolk and in eastern England as a whole, and means it may be more important than it appears at first sight.

Appendix 4: Cemetery Sites in Eastern England Dataset

Cemetery	County	Date (century AD)	Preservation	Burial #	Inhum #	Crem #	Inhum Animal Bone	Crem Animal Bone	Reference	Number
EASTERN ENGLAND										
Castledyke South	Lincolnshire	late 5th-late 7th	reasonable	197	196	1	y	y	Nicholson 1998	1
Sheffields Hill	Lincolnshire	6th – 7th	poor	119	117	2	n	n	Leahy pers. comm. 2015	2
Elsham	North Lincolnshire	5th - 6th	good	572	6	566	n	y	Squires 2011	3
Cleatham	North Lincolnshire	5th - 6th	good	1039	62	977	n	y	Squires 2011	4
Fonaby	Lincolnshire	6th century	poor	77	49	28	n	n	Cook 1981	5
Quarrington	Lincolnshire	late 5th - late 6th	reasonable	17	17	0	n	n	Dickinson 2004	6
Kirkby la Thorpe	Lincolnshire	7th	reasonable	9	9	0	y	n	Bonnor & Allen 2000	7
Thornham	Norfolk	7th	reasonable	28	28	0	n	n	Gregory & Gurney 1986	8
Field Dalling	Norfolk	6th	reasonable	109	2	107	n	y	unpublished	9
Baston	Lincolnshire	mid-5th - late 6th	reasonable	47	3	20	n	y	Mays & Dean 1976	10
Tallington	Lincolnshire	6th	reasonable	12	12	0	n	n	Albone 1998	11
Gunthorpe	Cambridgeshire	6th	reasonable	37	36	1	y	n	Patrick et al 2007	12
Minerva	Cambridgeshire	5th-early 7th	good	64	34	30	y	y	Gibson 2007	13
Tittleshall	Norfolk	5th-7th	poor	24	24	2	n	n	Walton-Rogers 2013	14
Spong Hill	Norfolk	5th	poor	2380	57	2323	n	y	Bond 1994	15
Swaffham Paddocks	Norfolk	6th	reasonable	20	19	1	n	n	Hills & Wade-Martins 1976	16

Oxborough	Norfolk	6th	reasonable	10	10	0	n	n	Penn 1998	17
Harford Farm	Norfolk	late 7th	poor	46	46	0	n	n	Penn 2000	18
Caistor-by-Norwich	Norfolk	4th/5th - 7th	poor	415	376	39	n	y	Myres & Green 1973	19
Bergh Apton	Norfolk	5th - 7th	poor	64	64	0	n	n	Green & Rogerson 1978	20
Morningthorpe	Norfolk	5th-7th	poor	374	365	9	n	y	Green et al. 1987	21
Flixton	Suffolk	late 5th-mid 7th	poor	62	62	0	n	n	Boulter & Walton-Rogers 2012	22
Bloodmoor Hill	Suffolk	7th - 8th	reasonable	28	28	0	n	n	Higbee 2009	23
Westfield Farm, Ely	Cambridgeshire	late 7th	good	15	15	0	n	n	Lucy et al 2009	24
Lakenheath	Suffolk	5th-7th	reasonable	434	427	7	y	y	Bond forthcoming; O'Connor unpub	25
Brunel Way, Thetford	Norfolk	6th	reasonable	11	11	0	n	n	Penn & Andrews 2000	26
Kilverstone	Norfolk	6th-early 7th	poor	6	6	1	n	n	Garrow, Lucy & Gibson 2006	27
Illington	Norfolk	6th-7th	reasonable	203	3	200	n	y	Davison et al 1993	28
Oakington I	Cambridgeshire	6th	good	26	25	1	y	n	Taylor et al 1998	29
Oakington II	Cambridgeshire	6th	reasonable	113	113	0	y	n	Nottingham 2015	30
Westgarth Gardens	Suffolk	5th - 7th	variable	69	65	4	n	n	West 1988	31
Coddenham	Suffolk	7th-early 8th	variable	50	50	0	n	n	Penn 2011	32
Snape	Suffolk	late 5th-7th	acceptable / poor	98	47	51	y	y	Filmer-Sankey & Pestell 2001	33
Tranmer House	Suffolk	mid-late 6th century	poor	30	19	13	n	y	Bond & Mustchin 2015	34
Sutton Hoo	Suffolk	late 6th-late 7th	reasonable	16	8	8	y	y	Bond 2005	35

Boss Hall	Suffolk	late 5th - late 6th century	poor	29	24	5	n	n	Scull 2009	36
Buttermarket	Suffolk	late 6th-early 8th	poor	71	71	0	y	n	Scull 2009	37
Barrington	Cambridgeshire	6th - early 7th century	reasonable	149	149	0	n	n	Malim & Hines 1998	38
Water Lane, Melbourn	Cambridgeshire	late 6th - late 7th	good	53	53	0	y	n	Duncan et al 2003	39
Great Chesterford	Essex	mid 5th-late 6th	good	193	160	33	y	y	Serjeantson 1994	40
Nazeingbury	Essex	7th - 9th	reasonable	192	192	0	y	n	Huggins 1978	41
Springfield Lyons	Essex	mid 5th-early 7th century	poor	282	139	143	y	n	Taylor & Major 2005	42
Rayleigh	Essex	late 5th-mid 6th	reasonable	146	145	1	n	y	Ennis 2008	43
North Shoebury	Essex	5th	reasonable	15	6	9	n	n	Wymer & Brown 1995	44
Mucking I	Essex	mid-5th to late 6th	poor	63	63	0	n	n	Mays 2009	45
Mucking II	Essex	mid-5th to early 7th	poor	739	276	463	n	y	Mays 2009	46
OTHER SITES										
Sancton	Yorkshire	5th-7th	reasonable	336	1	335	n	y	Bond 1993	47
Sporle-with-Palgrave	Norfolk	5th - 7th	reasonable	7	7	0	y	n	Ashley & Penn 2012	48
Caister-by-Yarmouth	Norfolk	8th - 10th	good	154	154	0	n	n	Darling & Gurney 1993	49
Asthall Barrow	Oxfordshire	7th	reasonable	1	0	1	n	y	Dickinson & Speake 1992	50
Butler's Field	Gloucestershire	mid 5th-late 7th century	reasonable	228	199	29	y	y	Boyle et al 1998	51
Prittlewell	Essex	7th	reasonable	1	1	0	n	n	Hirst 2004	52

St Mary's Stadium	Hampshire	6th-8th	good	54	26	28	n	y	Birbeck 2005	53
Apple Down	Sussex	late 5th - 7th	reasonable	185	121	64	n	n	Down & Welch 1990	54

All burial numbers (Burial #, Inhum #, Crem #) refer to total numbers within the cemetery. “Inhum Animal Bone” indicates whether the cemetery contains any inhumations with animal bone inclusions (Y/N). “Crem Animal Bone” indicates whether the cemetery contains any cremations with animal bone inclusions (Y/N). “Number” refers to the number of the site on the gazetteer map (Figure 4.2, page 117).

Appendix 5: Re-Identifications of Bird Remains from Spong Hill

Access to comparative avian reference material was limited in the original analysis of the Spong Hill animal bone (Bond 1994; J. Bond pers. comm. April 2016), meaning that birds other than domestic fowl, duck and goose were rarely identified. A targeted reanalysis was carried out to identify previously unidentified bird bones from the site, with the generous help of Terry O'Connor and the reference collection at the University of York.

Cremation	Previous ID	Taxon	Element
3317	Bird	goose	radius
2008	large bird	large bird	humerus
2077	Bird	small passerine	
2081	?mallard	?mallard	
2121	small bird	hedgehog	metacarpal
3091	Bird	plover sp.	tibiotarsus
3126	Bird	?chicken	phalanx 1
1811	Bird	mallard	tibiotarsus
1818	Bird	not seen	
2546	Bird	not seen	
1564	small bird	not seen	
2439	raptor claw	not seen	
2817	raptor claw	not seen	

Appendix 6: Animal Bone from Caistor-by-Norwich & Markshall Cremations

The cremated material which was retained by F.R. Mann (see Chapter 3) from Caistor-by-Norwich had last been assessed by Calvin Wells in the early 1970s (Wells 1973a), and is held by Norwich Castle Museum. This has been re-recorded and some identifications, especially of bird bones, were refined or corrected. Several cremations from Markshall were held by Norwich Castle Museum, and these were reassessed in the same manner as Illington (Appendix 2). In general, the separation of human and animal bone by Calvin Wells was effective, and therefore the separated animal bone was re-recorded and identifications refined in the same manner as Caistor-by-Norwich.

Cremation	Original ID	Taxon	Element	Quantity	Colour
CAISTOR-BY-NORWICH					
A3	Bird	medium bird	radius	1	white
E6	Absent	?roe deer	antler	1	grey/white
M19	Ox	cow	molar	1	grey / white
M47	sheep/goat	pig	metapodial	1	grey / white
M7	sheep/goat	medium mammal	vertebra	1	grey
N1	Pig	pig	scapula	2	grey / white
N1	Absent	unid	unid	4	
N10	Sheep	sheep	astragalus	1	grey
N14	Sheep	sheep	femur	2	grey / white
N19	Pig	?pig	pelvis	1	buff
N93	Ox	large mammal	vertebra	1	grey / black / white
N93	Absent	large mammal	shaft	1	unburnt
N93	Absent	large/medium mammal	shaft	1	unburnt
P11	Unid	unid	unid	4	grey / black
P9	?hare	?hare	tibia	1	grey
X1	horse tooth	medium mammal	shaft	1	black
Roman pot	Ox	cow	vertebra	1	unburnt
Roman pot	Bird	bird	femur	2	grey / white
Roman pot	Bird	bird	tibiotarsus	1	grey / white
MARKSHALL					
urn 3	absent	?small wild goose	carpometacarpus	1	white
urn 3	absent	bird	shaft	3	white
urn 4	absent	horse	metatarsal	1	buff
urn 4	absent	large mammal	humerus	1	buff

Appendix 7: Animal Bone recorded from Inhumation Cemeteries in Eastern England Dataset

Site	Grave	Taxon	Element	Age / Sex	Comments	Person	Age	Sex	Location of AB
CERTAIN INCLUSIONS									
Buttermarket	2339	unid			organic staining, interpreted as representing animal carcass	y	?juvenile	unk	see notes
Buttermarket	2365	pig	skull	adult		y	adult	?male	foot of grave
Buttermarket	2365	pig	2 hind limbs, 2 fore limbs	adult	carcass must have been jointed	y	adult	?male	beneath upper femurs and pelvis
Gunthorpe	F64	medium	ribs		probably sheep, probably buried as a side of meat	y	adult	m	above head
Melbourn	SG65	sheep	partial	imm.		y	adult	?F	in grave fill with human remains
Castledyke	4	pig	tibia, right			y	25-35	f	to left of skull
Castledyke	4	sheep	radius & humerus, right	imm.		y	25-35	f	to left of skull
Castledyke	4	small ung.	rib			y	25-35	f	to left of skull
Castledyke	16	unid	unknown (20 bones)			y	6-7 years	unk	at foot of grave
Castledyke	35	sheep	scap, humerus, radius, ulna, left			y	25-35	f	across right ankle
Castledyke	35	small ung.	7 rib frags			y	25-35	f	across right ankle
Castledyke	35	goose	phalanx 1			y	25-35	f	across right ankle
Castledyke	35	unid	5 frags			y	25-35	f	across right ankle

Castledyke	37	sheep	tibia & pelvis left, astragalus right	imm.		y	7-8 years	unk	left of waist hip
Castledyke	37	small ung.	right tibia frag, femur shaft frag			y	7-8 years	unk	left of waist hip
Castledyke	39	chicken	complete, except head			y	25-35	unk	right of legs
Castledyke	95	chicken	12 post-cranial		similar to modern bantam	y	35-45	?f	right of shoulder
Castledyke	124	chicken	20 post-cranial		similar to modern bantam	y	45+	?	right of left knee
Castledyke	134	pig / beaver	canine tooth		mounted as pendant	y	adult	f	outside left humerus
Castledyke	167B	chicken	15 post-cranial		similar to modern bantam	y	35-45	f	right of abdomen
Castledyke	180	goose	34 post-cranial			y	35-45	m	on lower left arm ("right arm folded over abdomen, clasping goose")
Castledyke	198	chicken	tibiotarsus, 2 tmt shaft frags		similar to modern bantam	y	adult + juvenile	unk	right waist of adult
Nazeingbury	G64	horse	tooth		may have been used as a pendant	y	30	f	in chest area
Springfield Lyons	8577	horse	cranium		harnessed	n			in pit, appears purpose-dug. Described as "to west of late Bronze Age enclosure ditch, just outside one of the entrances"
Great Chesterford	86	dog	whole	old	shoulder height - 60-62mm	y	juvenile	m	foot of grave, above feet
Great Chesterford	HG1	horse	whole	c. 2 years		n			
Great Chesterford	142	horse	whole	5-6 years	estimated height 1.42m, 14 hands	y	25-35	m	beside man, lying on left side

Great Chesterford	DS2	dog	whole	old	height - 330-380mm	n			
Lakenheath	404	horse	complete	9 yrs	lightly-built	y	young adult	m	alongside person
Lakenheath	G117	cattle	ribs			y	young - middle aged	m	above left shoulder
Lakenheath	G287	sheep	lumbar vertebrae, sacrum	adult		y	15 yrs	m	to north of upper body (side)
Lakenheath	G294	chicken	humeri, synsacrum, femur			y	young adult	m	above right shoulder, by head
Lakenheath	G307	sheep	2 x cervical verts, 2 x thoracic verts			y	adult	m	by feet
Lakenheath	G203	sheep	6 ribs, prox. humerus			y	elderly	f	near feet
Lakenheath	G188	sheep	mandible			y	middle-aged	m	lying over left tibia
Lakenheath	G179	sheep	right femur shaft, right tibia shaft	imm.		y	20-23 yrs	m	lying over right leg
Lakenheath	G296	sheep	ribs - 7			y	young adult	m	by hip
Lakenheath	G296	sheep	scapula, left			y	young adult	m	??
Lakenheath	G296	sheep	mandible, right	c. 1 yr	appear on plan to articulate w/ maxilla??	y	young adult	m	on femur
Lakenheath	G296	sheep	maxilla, right	c. 2 yrs	appear on plan to articulate w/ maxilla??	y	young adult	m	on femur

Lakenheath	4026	horse	complete	5 years		y	young adult	m	next to container - clearly squashed in around it
Lakenheath	4026	sheep	right side head & 2 hyoids, 8 ribs, right femur shaft	c. 1 yr	ribs & femur consistent with age of skull, but no smoking gun	y	young adult	m	within box, up against side nearest horse. Clearly in 3 separate portions
Lakenheath	G443	sheep	ribs			y	young - middle aged	m	above right shoulder
Lakenheath	G443	sheep	right humerus distal, right ulna prox.			y	young - middle aged	m	above right shoulder
Lakenheath	G443	sheep	right tibia shaft			y	young - middle aged	m	above right shoulder
Lakenheath	G24	pig	canine			y	10-14 yrs	f	?
Oakington II	56	duck	humerus, ulna, radius, cmcp	adult		y	adult	m	
Oakington II	1744	horse	missing head, cervical verts and right-hand side	c. 5 years	c. 12.2 - 13.1 hands	n			truncation
Oakington II	1832	horse	complete	<5 years	c. 13.3 - 14.1 hands	n			positioned on left side with legs flexed
Oakington II	??	cow	complete, caudal verts missing	8 - 13 years	withers height 1.13m	y	18-25	f	in grave
Snape	47	horse	head	20-30 years	harnessed; ploughing damage but interpreted as intentional head burial	y	?adolescent	m	adjacent to grave cut, shallow depth

Snape	47	medium / small mammal	complete			y	?adolescent	m	outside boat, within grave cut, on textile layer
Sutton Hoo	M 17	horse	complete	5-6 yrs	height of 1.44m at shoulder	y	25-35 yrs	m	separate grave
Sutton Hoo	M 17	sheep/goat	ribs	young	3 in one position, 2 in another - 2 different chops??	y	25-35 yrs	m	within grave, in ?leather bag, near copper bowl
UNCERTAIN INCLUSIONS									
Buttermarket	1669	dog	distal humerus		Labrador-size	y	unk	unk	adjacent to body stain
Buttermarket	1669	pig	molar, prox. Tibia	adult		y	unk	unk	adjacent to body stain
Buttermarket	1669	pig	prox. Tibia	juv.		y	unk	unk	adjacent to body stain
Buttermarket	4955	?red deer	astragalus			y	adult	unk	base of coffin
Buttermarket	4955	cow	upper right maxilla, M1-M3	young adult		y	adult	unk	base of coffin
Buttermarket	4275	unid				y	adult	female	in upper fill
Caistor-by-Norwich	8	unid	unid			y	unk	unk	above heads, associated with a pot
Caistor-by-Norwich	13	unid	unid			y	unk	unk	in pot west of grave
Caistor-by-Norwich	27	unid	unid			y	unk	unk	beneath clavicle of upper skeleton
Caistor-by-Norwich	37	cattle	unid			y	unk	unk	in fill above skeleton
Caistor-by-Norwich	37	pig	unid			y	unk	unk	in fill above skeleton
Barrington	G60/62	dog			incomplete; smaller than average Anglo-Saxon dog	?			
Minerva	P1056	dog	24 bones	old	shoulder height 0.67m	n			

Castledyke	8	cow	proximal femur, left			y	35-45	f	between thighs
Castledyke	8	cow	shaft frags		probably from same femur	y	35-45	f	between thighs
Castledyke	36	dog	6 rib frags			y	adult	m	below left foot
Castledyke	38	horse	4th metatarsal, left			y	45+	m	right of legs
Castledyke	118	horse	PM2	elderly	"extremely worn"	y	45+	f	chest area
Castledyke	165	chicken	coracoid			y	3-4 years	unk	in ?posthole at west end of grave
Cleatham	11	bird; cf chicken	unspec.			y	young adult	f	by right hip
Cleatham	27	medium mammal	scapula			y	adolescent	m	against left elbow
GtCh	33	cow	mandible, frag			y	15-25	m	contents of glass bowl
GtCh	33	unid	unid		small scraps	y	15-25	m	contents of glass bowl
GtCh	55	goose	synsacrum			y	35-45	f	left elbow
GtCh	HG1	s/g	tooth			n			
GtCh	HG1	s/g	dpm	juv.	dpm worn	n			
GtCh	142	large mammal	unid			y	25-35	m	unspec.
Kirkby la Thorpe	G2325	dog	mandible			y	25-35	f	fill?
Kirkby la Thorpe	G2325	horse	vertebrae			y	25-35	f	parallel to back
Lakenheath	G38	plaice / flounder	cleithrum			y	25-30	f	in grave fill
Lakenheath	G246	cattle	lumbar vertebra			y	subadult	unk	in area of torso
Lakenheath	G178	cattle	ribs			y	middle aged	m	??

Lakenheath	G442	sheep / goat	upper dP4 & M1	imm.		y			no location
Lakenheath	G442	sheep	1 frag caudal vertebra	imm.		y			no location
Morningthorpe	37	cow	molar			y	young adult	?m	in grave
Morningthorpe	38	unid				y	unk	unk	in fill of ring ditch around grave
Morningthorpe	115	horse	tooth			y	unk	unk	towards legs, some distance from rest of grave goods
Morningthorpe	211	large ung.	tooth			y	unk	m	in grave
Morningthorpe	250	?pig				y	1 - ?adult; 2 - adult	1 - unk; 2 - ?m	in fill of inhumation (1) with cremated bone (2).
Morningthorpe	387	unid	bone or antler			y	unk	unk	under pot
Swaffham Paddocks	19	unid	vertebra			y	25-30	m	by left arm
Oakington I	G9	sheep	femurs			y	child (7-12 years)	unk	left side of skeleton
Oakington I	G18	sheep	femur			y	18	f	by left leg
Oakington I	G23	cow	"bone"			y	child (c.6 years)	unk	between legs
Oakington II	53	goose	radius, left	adult		y	child	unk	
Oakington II	54	sheep / goat	humerus, left			y	child	unk	
Oakington II	56	cow	radius, left	<18 mo.		y	adult	m	
Oakington II	56	pig	fibula	neonate		y	adult	m	
Oakington II	64	sheep / g	metacarpal	<18-24 mo.		y	adult	m	

Oakington II	64	sheep / goat	radius	3 years +		y	adult	m	
Oakington II	78	sheep / goat	metacarpal	<18-24 mo.		y	1 - adult; 2 - child	1- f; 2 - unk	
Bloodmoor Hill	G 27	Sheep	mandible			y	juvenile	unk	to left of upper legs
Sutton Hoo	M 1	Unid	unid			y	adult	m	on great silver dish, wrapped in a cloth

Contents of Accompanying Data Disk

The accompanying CD contains the raw data collected for the eastern England dataset, including information from published and archive sources, in addition to data from the author's assessments of Illington, Field Dalling, Caistor-by-Norwich and Markshall.

The files included are as follows:

Gazetteer.xlsx – as Appendix 4.
Inhumations.xlsx – animal remains from inhumation burials, as Appendix 7
Spong Hill.xlsx – redigitisation of Spong Hill animal remains
Elsham Wolds.xlsx
Cleatham.xlsx
Illington.xlsx
Field Dalling.xlsx
Other cremation cemeteries.xlsx